DOCUMENT RESUME

ED 402 166 SE 059 231

AUTHOR	Koopmann, Richard W., Ed.
TITLE	Interpretive Sourcebook, 1996. A Sense of Place, A Sense of Space: Interpretation under the Big Sky. Proceedings of the National Interpreters Workshop (Billings, Montana, October 22-26, 1996).
INSTITUTION	National Association for Interpretation, Fort Collins, CO.
PUB DATE	96
NOTE	320p.
PUB TYPE	Collected Works - Conference Proceedings (021)
EDRS PRICE	MF01/PC13 Plus Postage.
DESCRIPTORS	American Indians; Animals; Art; Blacks; Elementary Secondary Education; *Environmental Education; Higher Education; *Interpreters; Natural Resources; Nature Centers; Partnerships in Education; Program Development
IDENTIFIERS	*Interpretation (Environmental)

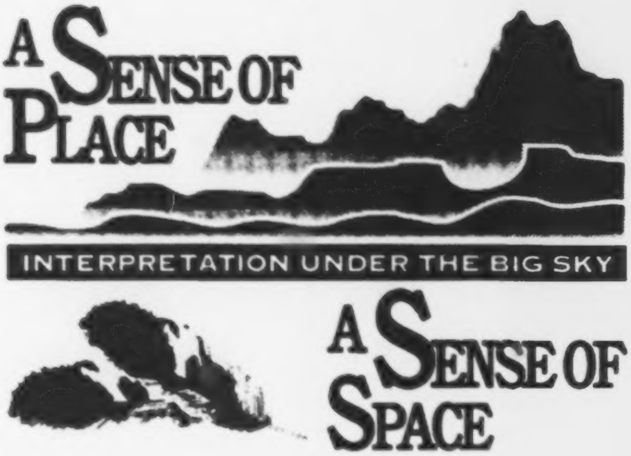
ABSTRACT

This sourcebook is a compilation of presentations from the National Interpreters Workshop held in Billings, Montana, in 1996. In this book, interpreters share stories of American battlefields, driving tours, wetlands, clovis points, floating classrooms, perfect signs, art collaboration, and wild animals in interpretive programming. Sections include African-American Experience; Council for American Indian Interpretation; Environmental Education; Nature Center Directors/Administrators; Program Management/Administration/Planning/Partnerships; Resource Interpretation and Heritage Tourism; Visual Communication; Zoos, Wildlife Parks, and Aquaria; Accessibility; Cross-Cultural Communication; Arts in Interpretation; Professionalism in Interpretation; Watchable Wildlife; Information Highway; Critical Issues; and Research. (JRH)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 402 166

1996
Interpretive Sourcebook


A SENSE OF PLACE
INTERPRETATION UNDER THE BIG SKY
A SENSE OF SPACE

PERMISSION TO REPRODUCE AND
DISSEMINATE THIS MATERIAL
HAS BEEN GRANTED BY
P. Tedesco

TO THE EDUCATIONAL RESOURCES
INFORMATION CENTER (ERIC)

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)
☒ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.

- Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

Proceedings of the National Interpreters Workshop
October 22–26, 1996
Billings, Montana

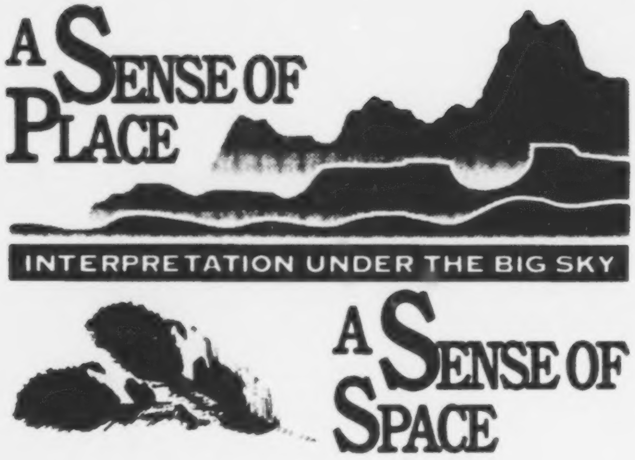
SE059231

BEST COPY AVAILABLE

THE NATIONAL ASSOCIATION FOR INTERPRETATION

Inspiring leadership and
excellence to advance
natural and cultural
interpretation as a
profession.

1996
Interpretive Sourcebook


A Sense of Place
Interpretation under the Big Sky
A Sense of Space

Proceedings of the National
Interpreters Workshop
October 22–26, 1996
Billings, Montana

Richard W. Koopmann, Editor

Copyright 1996 National Association for Interpretation.

Printed on recycled paper with soy ink.

A SENSE OF PLACE... A SENSE OF SPACE

Facing westward from Big Sandy, we drove the wagon twenty miles to the quarter section which was to be our home on the wide windswept prairie; and just before sundown we stopped on the spot where our shack was to be. The sun shone on the grass sparkling with raindrops; the wild sweet peas nodded their yellow heads in friendly greeting. As I looked across the rolling expanse of prairie, fired with the beauty of a Montana sunset, I sent up a little prayer of thanksgiving from my heart for this, our very first home. Only a rectangle of prairie sod, raw and untouched by the hand of man, but to us it was a kingdom.

—The Diary of Pearl Rice Robertson, 1911

The American West is a place of vast spaces where ranch houses and grocery stores can be hundreds of miles apart. It is also a landscape of unending stories...stories of discovery, of phenomena of nature, of hardships, of cultural differences which led to wars, of shared values, of people whose individual and collective actions shaped the region...stories which need to be told and retold because they represent who we are and connect us inextricably to the past, present, and future.

The numerous authors who have contributed to the collection of presentations found in this edition of the *Interpretive Sourcebook* are from many places on this Earth. These interpreters enthusiastically share stories of American battlefields, driving tours, wetlands, clovis points, floating classrooms, perfect signs, art collaboration, and wild animals in interpretive programming.

I wish to thank all of the professionals who have agreed to be active participants in this workshop *Sourcebook*. Together, you are helping to respond to the needs of a profession growing quickly into the next century. A very special thank-you is extended to Heather Brooks and Nancy Nichols at the NAI National Office for the technology savvy, warm humor, and assistance with the development of the *Sourcebook*. Additionally, support from the Workshop Committee and NAI office staff (including several devoted work-study students from Colorado State University) was most welcome and greatly appreciated.

Financial support for the *Sourcebook* was provided in part by the U.S. Environmental Protection Agency.

Richard W. Koopmann

Richard W. Koopmann, Editor
Interpretive Sourcebook
1996 National Interpreters Workshop

NOTE: The information and opinions expressed in this publication are those of the individual authors and do not necessarily reflect the official position of the directors, officers, staff, or membership of the National Association for Interpretation.

CONTENTS

AFRICAN-AMERICAN EXPERIENCE 1

Another Kind of Glory: Success Stories in Interpreting the African-American Experience 3
Martin Blatt and William Gwaltney

COUNCIL FOR AMERICAN INDIAN INTERPRETATION 7

Establishing a Sense of Place: American Indians and Interpretation in the Intermountain Field Area of the NPS 9
Rosemary Sucec and Kim Sikoryak

Facing Hot Issues—Celilo Falls Photo Exhibit at the Nez Perce National Historical Park 12
Diana Miles

A Sense of Justice—A Sense of Excellence: Working Together with American Indians 15
Tom Richter

Travels with Tony Buckskin: Learning to See the Colorado Landscape Through Ute Indian Eyes 18
Dr. James A. Goss

ENVIRONMENTAL EDUCATION 19

Can Environmental Interpretation and Environmental Education Share the Same Space? 20
Doug Knapp, Ph.D.

Children Are the Future of the Everglades: A Curriculum for Fourth-Grade Teachers 21
Neil De Jong

Chugach Environmental Educators Teach in the Russian Far East 24
Elaine Gross

"Conservation Carnival": An Innovative Concept in Natural Resource Education 26
David A. Dutton

Creating Community for the Future: A High School Stewardship Program 28
Jill Torres and Sharon Farrell

Earth Stewards: Partnership-Based Environmental Education 30
Jamin A. Thomas and Gary W. Mullins

Finding Your Space Within the NatureLink Program 32
Kelly Barnett Heller

Focus and Fun Form the Framework for Fabulous High School Field Trips 34
Celese Brune and Ralph Naess

The Herplab: Live Reptiles Teach Important Ecological Concepts 36
Philip R. Brown

Incorporating Wildlife Research into Outdoor Education Programs 39
Dave Guritz and Tim Prange

Lake Roosevelt Floating Classroom: An Environmental Education Program at Lake Roosevelt National Recreation Area 42
Bradford Frye

Make a Memory—Creating Effective School Field Trips 44
Robert Keys

The National Environmental Education Standards Project 48
Bora Simmons

The Need for Natives 50
Mike Dunn

Planning for Successful Teacher Workshops 54
Elsie Sellars Hardenbrook

The Relationship Between Environmental Interpretation and Environmental Education 56
Doup Knapp, Ph.D.

A Sense of Place for Environmental Education and Interpretation 59
Jeanie Hilten and Richard F. Hilten

A Simple Assessment 62
Patricia McGlashan and Sil Pembleton

We Are on the Air!: How to Take a Vision and Develop a Marketable Product 64
Wendy Zohrer and Julie Barrows

"The Wetland Sleuth": Marsh Mallow Man 67
Wil Reding

What's Wild for Lunch? 69
Kay Young

NATURE CENTER DIRECTORS/ADMINISTRATORS 73

Capital Campaigns—Ask Questions First 75
Thomas D. Mullin

Effective Begging 77
Jeffery Coats and Karen La Mere

PROGRAM MANAGEMENT/ADMINISTRATION/PLANNING/PARTNERSHIPS 79

The Changing Role of the Professional Land Manager 81
George E. Tabb, Jr.

Dollars and Sense 83
Barbara L. Brown

From Guards to Guides: Incorporating Customer Service Professionals into Interpretive Program Management 86
Lisa Woolford

Grant Writing Basics 90
Jolene Redvale and Elizabeth Dickey

Interpreting Adult Exhibits for Children 93
Maria G.C. Papesh and Tess Shatzer

The Light at the End of the Tunnel! 96
Roxanne Farwell

Mission-Responsive Site and Building Design 99
Paul B. Anderson and Laurence Page

Partnering with Your Neighbors for Effective Interpretive Programs 103
Mary Tagliareni

The Process of Interpretation: Fulfilling the Mission through Interpretive Competencies 106
David B. Dahlen, David Larsen, Sandy Weber, and Robert Fudge

Successful Management of Special Events 109
Retha W. Stephens

Training Teenage Volunteer Interpreters 110
Connie Loosli

Working Toward a Customer-Centered Interpretive Business—A Paradigm Shift 112
Tim Merriman, Ph.D.

RESOURCE INTERPRETATION AND HERITAGE TOURISM 117

From Biophilia to Clear-Cuts—How Much of Your Perspective Is Showing? 119
Linda M. Feltner and Wendy Walker

Making Geology Compelling 122
Sandra Snell-Dobert

Partners in Passage: Certifying New Professionals 124
Don S. Follows

Vibracores, Clovis Points, and Magnetometers: Gaining Insights from an Archeological Assessment for Interpretive Programs 128
Diane G. Stallings

Who Is Killing the National Parks? 131
Glen Kaye

VISUAL COMMUNICATION 135

HABS: Architectural Documentation for Recordation and Interpretation 137
Catherine C. Lavoie

HAER: Engineering Documentation for Interpretation 140
Richard O'Connor

Interpretive Sign Design: Pitfalls and Complications of Going It Alone 144
Jane M. Rohling, Mary L. Jahn, and Dick Ostergaard

Just Another Roadside Attraction? Getting Results with Interpretive Writing 148
Deborah Richie and John Grassy

Quest for the Perfect Sign 150
John W. Hanna, Ph.D.; Lisa Brochu; Bob Hernbrode; and Ames Fowler

ZOOS, WILDLIFE PARKS, AND AQUARIA 153

The Animal Enrichment and Education Connection 155
Barbara Ray

Beyond the Zoo Gates: Reaching Out to Urban Classrooms 158
Karin Hostetter

Dolphins as Environmental Education Tools 162
Peggy Sloan

In Defense of Anthropomorphism 164
Carl Strang

Thing Bags: Put Variety into Presentations with Household Items 167
Rhana Smout Paris

ACCESSIBILITY 169

Accessibility *Is* Customer Service! 171
W. Kay Ellis and Hal Hallett

The Disabled Cwmmunity—Your Best Resource for Accessible Design 174
Amanda Hughes

Tricks (and Good Advice) for a Terrific Tactile Tour 176
Marsha Knittig

CROSS-CULTURAL COMMUNICATION 179

Crossing Borders Through Interpretation: Taroko National Park in Taiwan, R.O.C. 181
Homer C. Wu and Michael H. Legg

The Spalding-Allen Collection 184
Bob Chenoweth

Tackling Taboos: Interpretation of Strife, Crime, Belief, and Relief 189
Michael H. Glen

ARTS IN INTERPRETATION 193

Beyond Illustration: A Collaborative Environmental Artwork 195
Lynne Hull and Ann Tevy Rosenthal

Beyond Illustration: The Nuts and Bolts of Programming with Artists 196
Lynne Hull

Compelling Stories 197
Connie Rudd

The Costumed Character: From Brass Buttons to Butterflies 199
Ray Morris and Marsha Knittig

Meet a 1933 Junior Naturalist 203
Douglas Bruce McHenry

A Picture Is Worth a Thousand Interpretive Programs 205
Jodi Morris

Puppetation 209
Travis White

Storylab I—An Introduction to Storytelling 212
Linda Yemoto

Theater-in-the-Park vs. Virtual Reality 216
Pat Gorman

Writing for the Local Market 219
Sharol Nelson-Embry

PROFESSIONALISM IN INTERPRETATION 221

American Battlefields: Compelling Stories and Interpretive Challenge 223
John Doerner and Anton Heinlein

Experience of Place: An Internship Model 224
Elizabeth F. Hoermann

From the Classroom to the Forest: Applying Formal Educational Research to the Informal (Interpretive) Setting 227
Judith Visty

Implementing a Natural History Interpretation Major 231
Dr. David V. McCalley and Dr. Daryl Smith

Interpretation as an Emotional Journey—Memorializing Firefighters on Storm King 234
Kathy Voth

Interpretive Fallacies and Their Effects on Credibility 238
David Matthew Zuefle, Ph.D.

Living History: Hobby or Profession? 241
John C.F. Luzader and Jerri Spellman

Tilden's Sixth Turned Upside Down, or How to Keep the Fun in Interpretation 244
David Weiss and Anna Bates

Training Techniques to Avoid Miscommunication at the Front Desk 246
Lenore Heppler

What Have You Done for Your Career Lately? Career Development for Interpreters 250
Broc Stenman

WATCHABLE WILDLIFE 253

Driving Tours: Listenable Wildlife 255
Peter B. Lewis and Laura Reeves

Put Puppets in Your Bag of Tricks: The Watchable Wildlife Puppet Quiz Game 258
Don Pendergrast

Wild Animals in Programming: Interpretation, Regulations, Selection Criteria, and Housing Standards 261
Keston Woodyatt

INFORMATION HIGHWAY 265

Highway to the Tropics: An Educational Research Project on the Internet 267
Michael J. Kennedy and Mark Martell

A Space and a Place for a Computer Interactive Exhibit 270
Cindy Samples and Vicky Silcox

To Walden Pond by Touch Screen 273
Karl W. Honkonen and Karst R. Hoogeboom

A Virtual Walk into the Past: The People in the Past Project 275
LouAnn Jacobson

CRITICAL ISSUES 279

1-2-3—NLP 281
Smitty Parratt

Biodiversity, Banana Slugs, and Virtual Reality 285
Ed Moyer

Key Issues for Interpretation in Developing Countries 288
Kye Joong Cho

The Role of Education in Controversial Research in National Parks 292
Larry Points and Jay F. Kirkpatrick

RESEARCH 295

Research: A Foundation for Interpretation 296
Marcella Wells

Evaluation of National Wildlife Refuge Interpretation 297
Mary Grace Carson and Douglas M. Knudson

If We Teach It, Will They Come? Summer Nature Camp Participants—
Parental Motivations and Campers' Activity Preferences 303
Randy S. Smith

Interpretive Needs and Preferences in the Greater Great Salt Lake Wetlands Ecosystem 308
Janet A. Anderson, Ph.D., and Dale J. Blahna, Ph.D.

Marketing Cultural Resources: Visitor Expectation, Perception, and Satisfaction 317
John H. Burde and Christopher Mayer

APPENDICES 323

Appendix A: Authors' Guidelines, *Journal of Interpretation* 325

Appendix B: NAI Membership Form 327

African-American Experience

The Crow Indians occupied the Big Horn Basin before the first Europeans penetrated. John Colter, one of the early men to pass through, was followed in the early 1820s by trapper-guides Edward Rose and Jim Beckwourth, among the first African Americans of record in the northern Rockies. Both men lived among their adopted people, the Crows, off and on for years, while assuming leadership roles which persuaded the Crows not to resist the Army's presence along the Bozeman Trail.

ANOTHER KIND OF GLORY: SUCCESS STORIES IN INTERPRETING THE AFRICAN-AMERICAN EXPERIENCE

Martin Blatt, Chief of Cultural Resources/Historian
Boston National Historical Park
Charlestown Navy Yard
Boston, MA 02129

William Gwaltney, Superintendent
Fort Laramie National Historical Site
P.O. Box 86
Fort Laramie, WY 82212

ABSTRACT: *Focusing on a public history program forthcoming on May 28-31, 1997, this paper will present a case study of an unfolding success story in interpreting the African-American experience. A diverse group of organizations will be marking the centennial of the installation in Boston opposite the State House of the Augustus Saint-Gaudens memorial to Robert Gould Shaw and the Massachusetts Fifty-fourth Regiment, the first Union grouping of free black volunteers in the Civil War.*

KEYWORDS: *African-American experience, Massachusetts Fifty-fourth Regiment, Civil War, blacks in the Union army, public history.*

Massachusetts Fifty-fourth Regiment

President Abraham Lincoln's Emancipation Proclamation, issued January 1, 1863, was an admission that the North could not achieve victory without emancipation and the assistance of black troops. It turned a war to save the Union into one to end slavery. Soon after adoption of the proclamation, Massachusetts's abolitionist governor, John A. Andrew, requested permission from the War Department to organize the first regular army unit of free blacks in the North. Northern blacks quickly identified with the Fifty-fourth Regiment of Massachusetts Volunteer Infantry, staking their future on its success.

Because Massachusetts's African-American population was too small to fill the regiment, Andrew gained the cooperation of scores of black recruiters, most notably Frederick Douglass, to enlist volunteers from virtually every Northern state. Nearly four thousand African Americans served in the state's three black regiments.

Most whites considered black recruitment to be an uncertain experiment. Supporters of the project faced blistering racism and scornful opposition to the idea of placing blacks in uniform. Northern whites possessed little or no awareness of black culture and accomplishments, and whatever ideas they harbored about African Americans were largely formed by the demeaning images that poured out from the popular press. Accustomed to thinking of blacks as lacking intelligence and fit only for simple, manual labor, few believed that they could perform the duties of a soldier. Blacks found no refuge from such discrimination in the army.

The heroism of the first Union regiments of former slaves, such as those in Louisiana or the First South Carolina Volunteers, commanded by the Massachusetts abolitionist Thomas Wentworth Higginson, began to break down prejudice against the idea of black troops. Yet it remained the task of the Massachusetts Fifty-fourth, led by Colonel Robert Gould Shaw of Boston, to prove conclusively the wisdom of black recruitment. The success of the state's most important black regiment, especially its valor at Fort Wagner, South Carolina, on July 18, 1863, where many, including Shaw, died in a heroic but failed attempt to take the fort, paved the way for the enlistment of the approximately 178,000 blacks who wore Union blue and helped win the Civil War.

Saint-Gaudens Memorial

Creating a grand memorial statue to the martyrs of the Fifty-fourth Regiment was a commission granted to Augustus Saint-Gaudens, but not an idea created by him. In 1865, some black veterans and citizens of South Carolina attempted to create a monument to Shaw near Fort Wagner itself. Though the plan failed, a group of Bostonians, including Governor Andrew, Senator Charles Sumner, Colonel Henry Lee, and Joshua B. Smith (a former fuugitive slave who once worked for the Shaw family) began raising funds for a memorial in Boston. It took several years before Saint-Gaudens was commissioned to do the work and several more years for the work to be completed and installed on May 31, 1897.

The Memorial is an extraordinary piece of public art, one of the most important and powerful in the United States. It sits on the high corner of Boston Common at the busy intersection of Beacon and Park Streets, directly opposite the State House. A commemoration of the first free black regiment of the Union army, the bronze sculpture portrays Colonel Robert Gould Shaw and twenty-three black infantry volunteers. In this remarkable work, the three-dimensional figures of Colonel Shaw and his prancing steed emerge from a bas-relief background of marching men.

Booker T. Washington, one of the principal speakers at the unveiling, addressed the gathering and reminded those in attendance that the "full measure of the fruit of Fort Wagner" would not be realized until full opportunity was available to everyone, regardless of race.

Planning for the Centennial of the Memorial

Planning for the Centennial began in early 1996. The overall coordinator is Ken Heidelberg, site manager of the Boston African American National Historic Site, which features the African Meeting House. The African Meeting House was a key site in abolitionist organizing and a center for the recruitment of free blacks into the Massachusetts Fifty-fourth. The Centennial committee is broadly inclusive, involving public agencies, universities, libraries, museums, historical agencies, Civil War reenactor groups, private sector firms, and others.

Centennial efforts are focused on an interpretation of the Massachusetts Fifty-fourth which emphasizes the crucial role played by African Americans in the Union army. The Centennial will celebrate the heroism and contributions of the Massachusetts Fifty-fourth, examine the historical context of the regiment in the 1860s and of the memorial in the 1890s, and explore the relevance of the regiment and the memorial for our contemporary world.

Centennial Program

The program will encompass three distinct areas of activity: educational outreach, conference, and public ceremony/encampment by reenactors.

Educational outreach. Educational outreach will be organized for school children in Boston-area public schools. This activity will commence in February during Black History Month and continue through May 31, 1997. We will sponsor teacher workshops and curriculum packets and organize field trips to the monument and Boston's Black Heritage Trail, a project of the Boston African American National Historic Site and the Museum of Afro-American History. School children will be actively engaged through essay writing and art contests.

Conference. There will be a major conference with a working title, "The Massachusetts Fifty-fourth Regiment and Memorial Monument: History and Meaning," from May 28-May 30, 1997. The conference, which will be free and open to the public, will begin on Wednesday evening, May 28, at Harvard University's Sanders Theater. Colonel Shaw attended Harvard, and the university played a central role in the installation of the Memorial in 1897. The remainder of the conference will be held at Suffolk University on Boston's Beacon Hill, only a few blocks from the Memorial and the African Meeting House. The entire conference program will be easily accessible for all in attendance as organizers have stressed to presenters that a broad, general audience will be attending. To keep the conference lively, individual sessions will vary in format and presentational styles. We are exploring the addition of a session featuring a living history debate between Booker T. Washington and W.E.B. DuBois, voices that represented conservative and radical positions, respectively, in the black community in the 1890s, when the Memorial was installed. To date, the conference outline is as follows:

Session I. "The Impact of African-American Soldiers on the Civil War"
Barbara Fields, Columbia University.
William McFeely, University of Georgia.
Robert Bellinger, Suffolk University, moderator.

Session II. "Changing Visions of the Civil War, 1863-1897."
David Blight, Amherst College.
George Fredrickson, Stanford University.
Edward Linenthal, University of Wisconsin-Oshkosh.
Nina Silber, Boston University, moderator.

Session III. "The Meaning of the Massachusetts Fifty-fourth Regiment."
James Horton, George Washington University.
Edward Redkey, State University of New York-Purchase.
George Coblyn, Massachusetts Fifty-fourth descendant.
Carl Cruz, Massachusetts Fifty-fourth descendant.
Donald Yacovone, Massachusetts Historical Society, moderator.

Session IV. "Black and Brahmin Society."
Carla Peterson, University of Maryland.
Jean Fagan Yellin, Pace University.
Lois Horton, George Mason University, moderator.

Session V. "The Monument to Robert Gould Shaw and the Massachusetts Fifty-fourth Regiment."
Kathryn Greenthal, biographer of Augustus Saint-Gaudens.
Marilyn Richardson, biographer of Edmonia Lewis.
Kirk Savage, University of Pittsburgh.
Thomas Brown, University of South Carolina, moderator.

Session VI. "The Art of Heroism: Poetry, Music, and the Memorial Monument."
Denise Cooney, University of Puget Sound.
Helen Vendler, Harvard University.

Shaun O'Connell, University of Massachusetts-Boston, moderator.
A Reading of Robert Lowell's "For the Union Dead."

Session VII. " Historical Reenactors and Understanding the Civil War."
Murray Dorty, Old Fort Jackson, Georgia.
William Bradley, Reenactor, Massachusetts Fifty-fourth.
Walt Sanderson, Reeactor, Massachusetts Fifty-fourth.
Howard Mitchell, Reenactor, Massachusetts fifty-fourth.
Benny White, Reenactor, Massachusetts Fifty-fourth.
James Cullen, Harvard University, moderator.

Session VIII. "History on Film: *Glory* and the Massachusetts Fifty-fourth Regiment."
William Gwaltney, National Park Service.
Patricia Turner, University of California, Davis.
Edward Zwick, Bedford Falls Company (invited).
Moderator to be named.

Public ceremony/encampment by reenactors. The Centennial activities will culminate in a parade and public ceremony on Saturday, May 31. Henry Louis Gates, Jr., director of the W.E.B. DuBois Institute, Harvard University, will be the featured speaker at the public ceremony. Other dignitaries from the public and private sectors, including President Benjamin Payton of Tuskegee University (founded by Booker T. Washington), will speak. The program will take place at the site of the Memorial and will follow a parade by Civil War reenactors of black Union troops.

In the days preceding the public ceremony, there will be an encampment and series of activities involving Civil War reenactors of the Massachusetts Fifty-fourth Regiment.

Conclusion

This Centennial program promises to be a success story in interpreting the African-American experience. From May 28 to May 31, 1997, Boston will honor the history and meaning of the Civil War's most famous African-American regiment and the monument that commemorates the heroic efforts of blacks and whites to end slavery and to strive for racial equality. The program we have developed is intended to bring a vital part of American history to the public. We welcome the active participation by NAI members in this Centennial program. For further information and logistical details, please contact Martin Blatt at the address above, or call at 617-242-5648.

References

Burchard, Peter. 1965. *One Gallant Rush: Robert Gould Shaw and His Brave Black Regiment.* New York: St. Martin's Press.

Glatthaar, Joseph T. 1990. *Forged in Battle: The Civil War Alliance of Black Soldiers and their White Officers.* New York: New York Free Press.

Wilson, Susan. 1994. *Boston Sites and Insights: A Multicultural Guide to Fifty Historic Landmarks In and Around Boston.* Boston: Beacon Press.

Yacovone, Donald. 1993. *We Fight for Freedom: Massachusetts, African Americans, and the Civil War.* Boston: Massachusetts Historical Society.

Council for American Indian Interpretation

If the white man wants to live in peace with the Indian, he can live in peace. There need be no trouble. Trust all men alike. Give them all the same law. Give them all an even chance to live and grow. All men were made by the Great Spirit Chief. They are all brothers. The earth is the mother of all people, and all people should have equal rights upon it.

—*Chief Joseph, Nez Perce Nation*

ESTABLISHING A SENSE OF PLACE: AMERICAN INDIANS AND INTERPRETATION IN THE INTERMOUNTAIN FIELD AREA OF THE NPS

Rosemary Sucec
Cultural Resource Specialist
NPS-Colorado Plateau System Support Office
P.O. Box 25287
Denver, CO 80225

Kim Sikoryak
Interpretive Program Leader
NPS-Rocky Mountain System Support Office
P.O. Box 25287
Denver, CO 80225

***ABSTRACT**: An increased sensitivity to the interpretation of American Indian cultures has surfaced a number of issues which challenge the way we interpret these cultural communities. Much of our early interpretation has been found to be incorrect or insensitive. Identifying the issues and concerns, suggesting ways to overcome them, and seeking ways to have greater involvement with American Indian tribes in the interpretive planning process have been the focus of discussion. Despite many obstacles, innovative strides are being made to enhance interpretation of American Indian histories and cultures.*

***KEYWORDS**: American Indian, consultation, national parks, interpretation, NAGPRA.*

Introduction

Earlier this year, a meeting held between NPS central office interpreters and cultural staff in the Intermountain Field Area (IMFA) identified issues or obstacles pertaining to American Indian involvement in interpretive activities as a way to better interpret these cultures. These issues were presented in a table distributed to parks for comment. The subsequent dialog resulted in a number of lengthy and thoughtful replies, reflecting a notable contribution of park staff time in communicating their perceptions of and experiences with this issue.

All of the comments and suggestions from the replies have been incorporated into the original set of tables which are available as handouts. To distinguish them, the responses have been placed in italics, along with the names and park associations of those who offered feedback. One of the reasons for recognizing contributions is so that park personnel could contact their colleagues who may be grappling with similar issues.

These tables represent a dialog suspended in time and over great expanses of distance and topography made possible by the electronic medium. The tables created a forum in which an exchange occurred about many issues, including the challenges they present and the resourceful means many have found for resolving them. Further, there is much in the tables that will serve as an aid in the future as work in this area continues.

About the responses: Many park staff concisely articulated the practical realities of park operations that can act as limiting factors or constraints in accomplishing worthy goals. Please refer to the numerous italicized additions to the columns of "obstacles" and "related information." Simultaneously, ingenious suggestions were made for surmounting most of the obstacles. Because there were so many inventive suggestions, the names of the individuals and parks who offered them have been included in the tables so that park staff may contact one another for more information. The issue which received the greatest response pertains to the use of certain terminology associated with the "Anasazi." There is disagreement in some responses. While some suggest telling all interpretive stories, others say that is not practical. Some say involve tribes early in the planning process; others say it delays the process. Some believe American Indians are not a valid theme in a natural park area; others disagree. No attempt has been made to reconcile these differences. They are offered here as reflections of the distinctive experiences, viewpoints and contexts represented by parks and staff within the Intermountain Field Area.

Many of those who responded expressed frustration with several issues. Included among these were communication problems in their relationships with tribes; recruitment of American Indian interpreters; the lack of money, time and other resources to adequately consult with numerous tribes and produce interpretive products from that consultation; the lack of coordination among groups—including the System Support Offices—who have an interest in American Indian consultation; resistance from cooperating associations in incorporating American Indian perspectives; and the bundle of issues that seem to be enmeshed with American Indian consultation.

While the set of tables could not address all of the concerns, contained within them are resources for obtaining some relief. A soon-to-be-published NPS guidebook and directory will suggest likely tribal affiliations for IMFA park units, as well as some guidelines for conducting consultation. The names and phone numbers of staff within each of the system support offices are provided. They can assist with any consultation concerns and in developing programmatic agreements with tribes. Contacts are provided for the Council of American Indian Interpretation (CAII) who are willing to help park staff incorporate American Indian perspectives into interpretive activities.

The tables referred to above form the basis for the session's discussion. Because of space limitations, only the "Successful Consultation" table is reproduced here in its entirety, while just one entry from the "Issues" table is presented. If you would like a complete set of tables or a copy of all of the responses from park staff, please feel welcome to request it by e-mail: Rosemary_Succe@NPS.Gov.

Successful Consultation on Interpretive Projects
Following are some examples of successful American Indian consultation on a variety of interpretive projects.

Park	Action
Aztec Ruins NM	An American Indian wrote the trail plans. Plans reviewed by Hopi tribe.
Bandelier NM	Indian curator on staff. Removed sacred sites from trail guide.
Canyon de Chelly NM	Native Guides Association. Actively involves tribes in consulting on a range of park activities. *Their Geographic Information System (GIS) incorporates archeological data with hopes of including vegetal, historic, ethnographic information too. For more information, contact CACH at 520-674-5506.*
Casa Grande Ruins NM	A member of the Tohono O'odham (Papago) Tribe is an interpreter on staff. For more information, contact Don Spencer at 520-732-3172
Chaco Culture NHP	Navajo and Hopi involved with revision of exhibit panel on "religion." At one time, tribes participated in planning for and review of interpretive prospectus.
El Malpais NM El Moro NM Petrified Forest NP	El Malpais staff actively and routinely consult with tribes. Some are reluctant and others are more responsive. *With El Moro NM, El Malpais is developing a joint policy to address American Indian uses of park resources. This project will be "interpreted" for visitors. El Moro, Pertrified, and El Malpais have undertaken a joint ethnographic overview and assessment that will benefit interpretive activities in all three of these parks. For more information, contact Ken Mabery at 505-285-4641.*
Glacier NP	The Blackfeet Tribe is under contract (through cooperating association) to provide interpretive programs.
Glen Canyon NRA	*Good working relationship with five tribes affiliated with the sacred site of Rainbow Bridge. Park has undertaken a programmatic agreement with these tribes concerning the management of Rainbow Bridge. Tribes will be involved in the review and comment of all media productions, e.g., exhibits, brochures, ranger programs. As a result of the tribal input and programmatic agreement, GLCA implemented major changes in how they "manage" the public at Rainbow Bridge. Interpreters and cultural program staff worked together on this major accomplishment.* *Developed a Resource Management/Interpretation Partnering Plan: each returning seasonal and permanent interpeter is "partnered" with a resource management discipline (archaeology, paleontology, water quality, etc.). Staff participate in field studies, research meetings, etc. They become the "interpretive expert" for the discipline. As a result, strong connections are made with resource management staff. Regular consultation with staff occurs as a matter of routine.*

	GLCA is actively pursuing the recruitment of American Indian interpreters. Also working to create coop positions for Indians. Tribes were involved at the last Comprehensive Interpretive Planning meeting. Pauline Wilson, the Indian Liaison at the park, reviews texts for site bulletins, etc. and facilitates interaction with tribes. For more information, contact Steph DuBois via cc:Mail at GLCA INTERPRETATION, or she can be reached at 520-608-6200.
Grand Canyon NP	Currently involving American Indians in interpreting the park through the Western States Arts Federation Project.
Hubbell Trading Post NHS	Navajo participation is the key ingredient in the traditional operation of the post.
Knife River	Revised interpretive exhibits with tribal consultation throughout the process. Some tribes were not able to attend for lack of funding.
Pecos NHP	American Indians are involved in the GMP planning process and in the exhibit revision.
Petroglyph NM	Efforts have been made to involve Puebloans in the planning processes, including a comprehensive interpretive plan. Now there appears to be a lack of funding to complete interpretive planning.
Little Big Horn Battlefield NM	Conducted a "Legacy" symposium in which tribes, scholars, and others were brought together to discuss interpretive issues.
Mesa Verde NP	Conducts annual consultation meetings at the park with all affiliated tribes invited and compensated. Pamphlets are being reviewed by tribes and some revisions are being made. Interpretive plan, at this point, has not been reviewed by affiliated tribes. Culturally insensitive exhibit objects removed from display through the consultation process.
Salinas Pueblo Mission NM	Participated in the "Columbus Quincentenary." Contracted with American Indians to provide their perspective.
Wupatki NM	Tribes are reviewing brochures, among other things.

Tribal Issues:

Obstacles	Related Information	Solutions
Contemporary tribes affiliated with Ancestral Puebloan (Anasazi) have requested that the NPS not use terminology like *Anasazi, rock art, ruins,* and *prehistory.* Some concern has been expressed about the word *ancient* as well.	How does the NPS respond to this request? What is this issue of "political correctness" all about? What terms are all right to use? *"These words are also obstacles to (non-Puebloan) park visitors. It is very clear to me during my walks...that such words are used* deliberately *because they have 'mysterious' connotations that distance these 'ancients' from the contemporary world....Rarely do visitors conceal their disappointment when I tell them that nearly 90% of this monument's 15,000 images were made within the past 400 to 600 years by ancestors of today's Puebloans. Such cultural continuity gives real context to people that (just a few minutes earlier) were only known figuratively as 'Anasazi. [Eric Brunnemann, PETR]*	*Steph Dubois, interpretive specialist at Glen Canyon National Recreation Area (GLCA) has agreed to coordinate an examination of the terminology issue for those parks with "Anasazi" or Ancestral Puebloan affiliation and make recommendations for resolution. If you wish to respond to a survey Steph is conducting, she can be contacted on cc:Mail at GLCA INTERPRETATION, or phone her at 520-608-6200.* *"At Petroglyph, the interpretive staff attempts to bridge these philosophical differences by using the most concise language possible when interpreting the monument's resources....We describe images that have been chiseled or etched into stone as petroglyphs, and painted images as pictographs....The term ruin is hardly ever used because it is enigmatic; we describe ruins by name or description....*

FACING HOT ISSUES—CELILO FALLS PHOTO EXHIBIT AT THE NEZ PERCE NATIONAL HISTORICAL PARK

Diana Miles, Park Ranger
Nez Perce National Historical Park
P.O. Box 93
Spalding, ID 83551

Problem

In the fall of 1994, the Nez Perce Tribe began regulating a fishing license for non-tribal fisherman harvesting fish on the Clearwater River within the reservation boundaries. This practice takes place on most of the larger reservations of the Northwest.[1] This license was in addition to the Idaho state fishing license. The decision, long overdue, was in accordance with both the 1855 Treaty and the 1863 Treaty which state that the tribe has "the exclusive right of taking fish in all the streams where running through or bordering said reservation....The tribe also has the exclusive right of taking fish from all usual and accustomed places...together with the privilege of hunting, gathering roots and berries, and pasturing horses and cattle." The Nez Perce Tribe wrote a letter to the U.S. Attorney General and Secretary of the Interior spelling out the legal difficulties and lack of diplomacy experienced with the State of Idaho.[2] Julie Kane, tribal attorney of the legal council, stated "the Tribe has had a long love-hate relationship with the state of Idaho and with Idaho Fish and Game in particular due to their refusal to adhere to the treaties or legal documents ordered by their own U.S. government." Mr. Sam Penney, then Vice Chairman and the current Chairman of the Nez Perce Tribe stated, "The basic issue here is that the state of Idaho has ignored the existence and authority of the Nez Perce Tribe in fish and wildlife matters for years and they have illegally set fishing seasons in the Clearwater River for years." This decision to practice a part of the sovereign rights of a nation met with public outcry and opposition.[3] The local newspaper, the Lewiston Morning Tribune, received letters to the editor such as this one: *"I've finally had enough! I never considered myself prejudiced, but the constant gimme gimme gimme of some minorities really gets my gall. I'm talking about the Nez Perce Tribe's latest attempt to extort money from non-Indian sportsmen....They also say they are special people and should be allowed to gamble on the reservation, even though it is illegal in the rest of the state....This is a notice to all you card-packing special citizen tribal members: I live off the reservation and will be posting my land...."*[4] During this time, the Nez Perce National Historical Park visitor center began to receive phone calls requesting copies of the treaties as well.

Response

We responded. The interpretive staff gave them not only copies of all three treaties but also of the Constitution of the United States. The most relevant sections were highlighted, showing that it is the U.S. government, not tribes, that make treaties. We attempted to educate the public through both phone conversations and visitations, but we also acknowledged that the public was not only unaware of the treaties but also very unaware of the livelihood of traditional fishing that sustained the Nez Perce and other peoples.

The following January we learned of a new photograph exhibit of Celilo Falls on the Columbia River in the state of Washington. This was the largest fishery of the northwest tribes before Euro-American arrival and the construction of the Dalles Dam. This exhibit was curated by photo archivist Thomas Robinson and the Committee for Photographic Preservation and included 49 black-and-white prints never seen before of tribal fisherman on nearby Celilo Falls which became inundated with the backwaters of the Dalles Dam in 1955. The prints came from 5x7 negatives recovered from a warehouse in Portland and were ready for disposal. The photographers were Everett Olmstead, Charles Tays and a few others from Elite Studio of Dalles, Oregon, which was open from 1932 to 1957.

Celilo Falls was not only the largest fishery in the Northwest but was also the place where many other cultural activities took place. The plateau tribes, including the Nez Perce, profited from the huge trade network. We traded our camas, flat hemp bags, hemp nets, and other material goods for the coastal peoples' wampum, dentalium shells, cedar baskets and other goods. We then traded some of these same items with the Plains tribes during buffalo season. Social networking strengthened intertribal relations in this customary annual gathering. To talk of Celilo Falls today among the elders is to touch the heart—it strikes many chords. Even the young fishermen are aware of its significance. The Nez Perce Nation continues to practice its fishing rights on the Columbia River.

We chose 18 of the photographs for our exhibit due to the short notice of its availability. It was on display in the Nez Perce NHP visitor center from early February to early March, where it was scheduled to be displayed at the Yakima Cultural Center on March 5. Along with the exhibit, we also had available several short documentaries produced by the Nez Perce Tribe, the Umatilla Tribe, and the Columbia River Intertribal Fish Commission.

During this time, something positive began to unfold from tribal and non-tribal people alike as the older generation began to share stories of their experiences and memories of the falls. Some of these people were only spectators to the great fishery and others were only children, yet fished with families. Only a few were adults before the falls were covered.

I felt that these stories needed to be shared with others and that they should be kept for the coming generations. For the last decade, the salmon and steelhead runs have dwindled down to only a few hundred returning each year, as compared to the thousands in the previous decades.[5] The tribal fishing season sometimes only lasts one or two days. In the 1980s the Nez Perce Tribe usually had an open season lasting several weeks. Today the young people will need every bit of information they can receive in the case of a total loss of the precious salmon and steelhead. What grandchild wouldn't love to go see their grandfather or relative on film and listen to this kind of experience! After discussing this with the staff, I contacted Dr. Alan Marshall of the Lewis Clark State College who has done extensive oral research and is very close to many Plateau people.

Outcome

We then began organizing an oral history project on those who had fished on Celilo Falls. Along with those who had viewed the photograph exhibit, we posted an article in the local newspaper asking for anyone who had fished on Celilo Falls and was willing to share their experiences to contact the park.[6] We tried to contact both men and women of all ages for the interviews. The procedures included the length and number of interviews, and release forms clarifying the project was for non-profit, educational and historical preservational purposes. The consultants could stop the interview at any time or stop the recording while certain conversations took place. The interviewers used audiotape, videotape, and still shots of each consultant. Each participant was given an 11x14 black-andwhite photograph of Celilo Falls. The questions asked the consultants included demographics, how many years they fished at the falls, how they traveled there, how long they stayed, where they stayed, whom they fished with, where and when they fished, what methods they used, and why they fished there. Photographs of the falls were used to facilitate memories, and the interviewer, Dr. Marshall, used "free association" or followed leads provided in the interviews. He also asked if at another time they would be willing to be interviewed again. The project was exhausting, exciting, educational, and only once was I asked to stop the video camera. Those interviewed were: Julius

Celilo Falls, early 1950s. (Copyright Nez Perce National Historical Park.)

22

Ellenwood, James Ellenwood, Jesse Greene, Allen Pinkham Sr., Alvin Pinkham Sr., Albert Pinkham, John Oatman, and Al Halfmoon. We have not yet interviewed a Nez Perce woman.

This kind of project can produce many things besides a product. It provides greater contact with the resource, allows you to work with other agencies or universities. Because of this conflict, the National Park Service was allowed to facilitate in the preservation of another piece of the culture. It also shows that even if it's a hot issue, it should not be avoided. As interpreters in all institutions, we can make a difference through sensitivity and understanding of the issues, facilitation, and education.

This project is not complete. There need to be more interviews, on more subjects which help in the documentation of the history and culture of the Nez Perce and all Americans. The tapes we have need to be transcribed. We could not afford the best equipment for archival materials, but it is a start. The possibility of inscribing the material onto compact disc is being considered. Since these interviews, we have already lost one of the elders.

References Cited

Newspaper Articles
Lewiston Morning Tribune: September 24, 27, 30, 1994; October 9, 1994; January 23, 1995.

Interviews
Nez Perce Tribal Fisheries Program, Merle Powaukee, June 8, 1996.
Columbia River Inter-Tribal Fish Commission, Paul Lumly, June 6, 1996.

Official Letter
Letter from the Nez Perce Tribal Legal Counsel, October 11, 1994.

Additional References
Hunn, Eugene S. 1989. *Nch'i-Wana, Mid-Columbia Indians and Their Land.* Seattle and London: University of Washington Press.
Relander, Click. 1986. *Drummers and Dreamers.* Seattle, WA: Pacific Northwest National Parks and Forests Association.
Wilkinson, Charles F. 1992. *Crossing the Next Meridian.* Washington, D.C., and Covelo, CA.

Notes

[1] Nez Perce Tribal Fisheries, Merle Powaukee, Int. June 6, 1996.

[2] Letter dated Oct. 11, 1994 from the Nez Perce Tribal Executive Committee to the Honorable Janet Reno, U.S. Attorney General and to Mr. Bruce Babbitt, Secretary of the Interior.

[3] Lewiston Morning Tribune: Sept. 24, 1994; Sept. 27, 1994; Sept. 30, 1994.

[4] Lewiston Morning Tribune: Letters to the Editor, Oct. 9, 1994, Letter from Joe Bradley.

[5] Int., June 6, 1996, Paul Lumly, CRITFC.

[6] Lewiston Morning Tribune, Jan. 23, 1995.

A SENSE OF JUSTICE—A SENSE OF EXCELLENCE: WORKING TOGETHER WITH AMERICAN INDIANS

Tom Richter, Interpretation Planner
Great Plains System Support Office
National Park Service
1709 Jackson Street
Omaha, NE 68102

ABSTRACT: *To produce meaningful museum exhibits related to American Indian history and culture, interpretation planners should take care to include American Indians as true partners, not mere advisors. Exhibition of culturally sensitive objects and information requires particular attention to the views of American Indians. A successful partnership will result in exhibits that encourage respect and understanding for the American Indian perspective of the topic.*

KEYWORDS: *American Indians, cultural sensitivity, exhibit planning, exhibit design, National Park Service, partnerships.*

Introduction

Agate Fossil Beds National Monument, Harrison, Nebraska, encountered an opportunity to interpret aspects of Lakota history and culture through the exhibition of the James Cook Indian Collection at the monument's new visitor center. The monument includes a portion of Cook's ranch where scientists had discovered the fossils. The Cook collection had evolved from a friendship between Cook and the Red Cloud family and other Lakota families at the Pine Ridge Indian Reservation. While making annual visits to the ranch, the families presented Cook with gifts which eventually became the collection. The 525 objects and 2,000 photographs of the collection provide a compelling view of Lakota culture as the people faced a transition from their traditional life on the Plains to the restricted life on the reservation.

Cook's descendants agreed to provide the monument with the Cook Collection with the understanding that the collection's exhibition take place at the monument. The Cook family provided ample documentation and description of the objects in the collection. An anthropologist under contract with the National Park Service developed the historical context of the collection from his perspective. The monument, however, realized that the exhibits would remain simplistic and sterile without the participation of American Indians to clearly place the objects within their cultural context. The process and the results of this partnership offer a guide for other interpretation projects involving American Indian culture.

Groundwork

Fortunately for the exhibit project, the monument staff began its relationship with Lakota people long before the formal planning of the exhibits. Since Scotts Bluff National Monument administers Agate Fossil Beds National Monument, the curator at Scotts Bluff, Audrey Barnhart, made several trips to Pine Ridge to meet elders who were related to the people who visited Cook. In a few cases, she actually met people who had made the trip to the ranch. Ms. Barnhart took care to develop a trusting relationship with the elders during her visits. This personal rapport took place on a gradual basis as the comfort level increased for all parties. Ms. Barnhart did not introduce the idea of oral history interviews to them until they had confidence in her interest and respect for their culture and history. Meeting people at the reservation and in their homes provided a distinct signal that we wished to interact with them on their terms. In some cases, we respected the wishes of individuals to not grant the interviews. In other cases, we engaged in some very illuminating views of the relationship between Cook and individual Lakota people. It became clear that the National Park Service previously had overly simplified the situation by stressing the friendship between Red Cloud and Cook. Out of that relationship had evolved a connection with several Lakota families who made the annual journeys to Cook's ranch. These visits represented not simply an opportunity to visit Cook, but a chance to enjoy their traditional way of life for a short while free of interference from reservation officials.

Setback

Just as Ms. Barnhart had earned the trust of many Lakota people, she transferred to another site. Such transfers occur frequently in the National Park Service for career or personal motivations, but the absence of Ms. Barnhart disrupted the relationship that she had developed at Pine Ridge. Fortunately the superintendent of Scotts Bluff, Jo Ann Kyral, had accompanied Ms. Barnhart on her last few trips to Pine Ridge. This helped to establish a transition in the relationship between the National Park Service and the Lakota people.

To complicate matters, exhibit planning had begun for the Cook Collection. We recognized the vital importance of including the views of American Indians within that planning process, but we lacked a means of strengthening the initial relationship developed by the departing Ms. Barnhart. Superintendent Kyral, nevertheless, listened to advice at Pine Ridge for a solution to the planning challenge.

Opportunity

Before her departure, Ms. Barnhart had received advice from several of her Lakota acquaintances to meet Brother Simon, Director of the Heritage Center of the Oglala Lakota Historical Society. Brother Simon enjoyed the respect and trust of many people at Pine Ridge. The Heritage Center had a similar mission to develop understanding and respect for Lakota culture and history. Out of conversations with Brother Simon, Ms. Barnhart and Ms. Kyral, came a decision to establish a cooperative agreement between the Oglala Lakota Historical Society and the National Park Service to provide input from the Lakota people for the exhibit at Agate Fossil Beds National Monument. Brother Simon suggested the names of individuals whom he felt would make valuable contributions to the resource panel for the exhibit project. It became clear to Ms. Kyral that Brother Simon represented an individual who could help foster the necessary relationship with the Lakota people since he enjoyed the mutual respect of all parties.

The cooperative agreement enabled the National Park Service to reimburse members of the resource panel for their expenses in time and travel to participate in the project. This provided a tangible way of demonstrating that we valued their participation and contribution to the exhibits.

A resource panel of people emerged with a wide variety of talents and interests. In addition to elders, the panel included Lakota educators, historians, artists, and tourism officials. Many served in some capacity with the Oglala Lakota College at Pine Ridge. With the help of Brother Simon, Superintendent Kyral met individually with many members of the panel in order to establish a personal rapport before convening a formal meeting between the resource panel and the rest of the exhibit team.

In order to convey respect and appreciation to the resource panel, the first meeting of the resource panel took place at the Pine Ridge Heritage Center. The meeting included other monument staff, the contract anthropologist, and interpretation planners from the National Park Service's Midwest Regional Office in Omaha, Nebraska, and the Harpers Ferry Interpretive Design Center in Harpers Ferry, West Virginia. After explaining the scope and intent of the exhibit project to the resource panel, the majority of the meeting involved informal discussions and individual conversations. The resource panel took time to identify people in the historic photographs taken during Lakota visits at the Cook ranch. The meeting concluded with plans for a follow-up meeting at the monument to view the Cook Collection to develop an understanding of its significance to the Lakota people. This action demonstrated for the resource panel that we wished a true partnership instead of general advice.

The next meeting built on the foundation of friendship developed at the first meeting. We spent most of the time in the collection room giving the resource panel members the opportunity to view the objects. As at the first meeting, individuals discussed the meaning and significance of objects in the collection. Out of respect for the personal experiences of the panel members during their first encounter with the collection, we did not take formal notes of their reactions. Their descriptions of the objects, however, transformed the objects from curiosities to living records of Lakota culture and history. With the participation of the resource panel, planning for the exhibits proposed to focus on the meaning of the objects to the Lakota people. The exhibits would represent an opportunity for both the public and the Lakota people to learn about an aspect of their heritage. The enthusiasm of panel members encouraged growing optimism of the entire exhibit team about the potential of the project.

Partners

As the project moved into its design phase, a contracted exhibit designer, Daniel Quan, joined the exhibit team. He quickly understood the need to design the exhibits with sensitivity and respect for the Lakota people. Needing additional feedback about the significance of the objects, Mr. Quan moderated another meeting of the resource panel at the collection room. This time, the discussions became more specific about the use of various objects to convey different exhibit themes. The resource panel made decisions on the most appropriate objects for each exhibit. There no longer could remain any doubt about their status as equal partners in the project. In fact, the monument received some criticism from Cook family members that we had strayed from Cook's interpretation of the objects. The family had the same opportunity to review exhibit designs as anyone on the exhibit team. Where appropriate to correct errors in fact about family history, we made their requested changes. On questions of interpretation, however, we decided that the exhibits would stand primarily as the Lakota people telling their story through the objects.

The resource panel provided the exhibit team with a very essential role to guard against the use of culturally sensitive objects in the exhibits. In all cases, we accepted their view. They stressed the need to convey a sense of respect for all the collection as a reflection of their history. In some cases, we became pleasantly surprised by their recommendations. In one case, they approved the exhibition of a whetstone belonging to the Oglala Lakota Leader Crazy Horse. They approved the use of a pipestone pipe as long as it rested on a bed of sacred sage. In other instances, the panel asked us not to display items of a personal or private nature.

Preparation of text for the exhibits provided us another way to establish the Lakota perspective of the exhibit by taking care to convey the Lakota descriptions of the objects and photographs. In several opportunities, we provided both the Lakota and Euro-American view of an historical event. We commissioned the preparation of a winter count by one of the artists on the panel to convey the sense of Lakota time. We constantly remained alert to any hint of a condescending tone in the exhibit text.

Conclusion

The scheduled opening of the exhibit in late October 1996, will provide a tangible demonstration of the benefits of working with American Indians as partners on the preparation of exhibits related to their culture and history. Not only does such a partnership provide an enriched perspective of the significance of the topic, but it simply remains the right thing to do. As Superintendent Kyral expressed early in the process to one of the resource panel members, "I can imagine my feelings if I learned the National Park Service intended to prepare exhibits on my ancestors without asking for my participation."

In view of the long unfortunate history between American Indian people and the government, this project could not have proceeded without an emphasis on the establishment of trust and mutual respect between individuals. Such personal groundwork remained vital for the ultimate success of the project. Approaching elders at the start of the project established our sincerity. Brother Simon's important role in the project illustrated the intangible influence of individuals and organizations of goodwill who have earned the trust and respect of different groups. Discussion of exhibit plans and designs waited until after we had proven our determination to forge a true partnership with the Lakota people. In the design process, it remains most important to honor the perspective and sensitivities of American Indian people especially in the selection of objects for exhibition.

The relationship between the Lakota people and Agate Fossil Beds National Monument will not end with the successful production and installation of the exhibits. The goodwill and understanding developed during their preparation will carry over into the operation of the monument. Already, some Lakota people have brought their children to see the collection in order to help teach them about some of their heritage. The monument's management remains determined to enhance its rapport with the Lakota people to develop the exhibits into a living demonstration of their culture and history through Lakota participation in interpretation programs, special exhibits, and special events. In that way, the monument will continue the ranch's long tradition as a place for Lakota people to encounter their traditional life, and as a meeting place for individuals of different cultures to further understand each other.

TRAVELS WITH TONY BUCKSKIN: LEARNING TO SEE THE COLORADO LANDSCAPE THROUGH UTE INDIAN EYES

Dr. James A. Goss
Professor of Anthropology
Texas Tech University
P.O. Box 41012
Lubbock, TX 79409-1012

ABSTRACT: *A narrative of an anthropologist's travels with a Ute Indian elder and spiritual leader, while learning the Ute language, traditions, ceremonies, and cultural landscape. The important anthropological method of "being there" to obtain valid cultural information in natural context. This presentation will, hopefully, expand the dialogue between Native American consultants, anthropologists, and interpreters.*

Writing down a full text of what I have learned from Ute elders would be a violation of their confidence. This is oral tradition that is the cultural property of the Ute people. The emphasis of the presentation is on "being there" at the right place and the right time with the tradition bearers. It is not possible to capture this knowledge in a brief written summary. The problem for interpreters is often expecting to capture something useful in a brief encounter with a completely different culture. If you want something of value, you must make a commitment of time. If you want the content, you must "be there" at the presentation.

Environmental Education

Do not try to satisfy your vanity by teaching a great many things. Awaken people's curiosity. It is enough to open minds; do not overload them. Put there just a spark. If there is some good inflammable stuff, it will catch fire.

—Anatole France

Financial support for this section was provided in part by the U.S. Environmental Protection Agency.

CAN ENVIRONMENTAL INTERPRETATION AND ENVIRONMENTAL EDUCATION SHARE THE SAME SPACE?

Doug Knapp, Ph.D.
Assistant Professor, Department of Recreation and Park Administration
Indiana University
Bloomington, IN 47405

At the turn of the century, individuals such as John Muir and Enos Mills helped to influence a new profession known as *nature guiding* and since labeled *interpretation.* This profession has impacted millions of people who strive to learn more about the resource sites they visit. Today interpretation can "educate, inspire, teach, reveal, provoke and create" (Vander Stoep 1991, p.13).

In 1969 oil leaked from a freighter off the coast of Santa Barbara. A few months later, the world saw a self-portrait of itself from our astronauts in space. The blue/green sphere highlighted the tenuous nature of life on our planet and how it could be harmed by humans' own carelessness. The tragic oil spill, the dramatic space photograph, and a series of other events initiated the first Earth Day in 1970. This worldwide event helped to "spawn" environmental education.

Since its inception, environmental education has had a close association with interpretation. The similar goals and aims of what can be considered environmental interpretation have fueled endless debates on the similarities between the two professions, causing many in the interpretive field to believe that they are actually one and the same (Hammitt 1981; Mullins 1984; Sharpe 1982). Mullins expresses the perceived similarities between the two fields:

> The major differences between formal environmental education and interpretation lie in the premise that formal education is a societal approved sanctioning system in which participants are required to learn and demonstrate certain competencies. Interpretation often uses the same messages, with the same media, in similar outdoor settings (Mullins 1984, p. 1)

Grant Sharpe in his textbook, *Interpreting the Environment,* is more explicit in stating, "Separating interpretation from environmental education is difficult" (1982, p. 25). The most recent text in interpretation, *Interpretation of Cultural and Natural Resources,* outlines a variety of learning strategies that can be used for interpreters that the authors state have been "applied in environmental education" (Knudson, Cable, and Beck 1995, p. 177).

There is no mistaking that environmental interpretation and environmental education are closely related. They are seen by many as having a symbiotic relationship. This close association has motivated the Environmental Education Section of NAI to offer this symposium to investigate the inherent similarities and important differences between the two professions. Below are some of the questions/topics that both the invited panelists and conference participants will discuss:

- Are the ultimate aims of environmental education and environmental interpretation similar?
- What are key characteristics of each profession that set it apart from the other?
- How can environmental interpretation and environmental education work best together?
- Can an environmental interpreter be an environmental educator?

Many in the field have their own ideas/opinions about these questions. This symposium will enable some of these thoughts to be discussed with the hope of a better understanding of the relationship of both fields. This knowledge will aid in developing better partnerships between the two professions to enhance the ultimate goals of each.

References

Hammitt, W.E. 1981. A theoretical foundation for Tilden's interpretive principles. *Journal of Interpretation* 12(3):13-17.

Knudson, D.M., T.T. Cable, and L. Beck. 1995. *Interpretation of Cultural and Natural Resources*. State College, PA: Venture.

Mullins, G.W. 1984. The changing role of the interpreter. *Journal of Environmental Education* 15(4):1-5.

Sharpe, G. 1982. *Interpreting the Environment.* New York: Wiley & Sons.

Vander Stoep, G.A. 1991. *Interpretation: A Resource and Curricula Guide for the United States and Canada.* Fort Collins, CO: National Association for Interpretation.

CHILDREN ARE THE FUTURE OF THE EVERGLADES: A CURRICULUM FOR FOURTH-GRADE TEACHERS

Neil De Jong
Chief of Interpretation and Visitor Services
Everglades National Park
Homestead, FL 33034

ABSTRACT: *Children are the Future of the Everglades is a multimedia curriculum that introduces fourth graders to the concept of national parks in general and specifically the issues facing Everglades National Park. Learn how the curriculum was developed and distributed to over 7,000 teachers throughout Florida; discover a cost-effective way to train 7,000 teachers in the use of the curriculum; and participate in hands on activities relating to the greater Everglades ecosystem.*

KEYWORDS: *Multimedia, teacher/student–friendly, hands-on, interactive, interdisciplinary, all-inclusive curriculum for fourth-grade teachers. Teacher training via live satellite teleconference workshop.*

Background

Everglades National Park receives hundreds of requests from teachers all over the world asking for information that they can use to teach their students about the Everglades. For years the park's education staff has said, "Wouldn't it be great if we had a fun, all-inclusive, curriculum based package? Something that every teacher in Florida could get for free!" Based on our twenty-five years of experience in providing on-site curriculum based programs we felt we had the expertise to produce such a package. Unfortunately, we did not have the money. We shelved the idea, thinking this was probably just another pipe dream. In the spring of 1992 the National Park Foundation (NPF) approached the Pew Charitable Trusts with a proposal to develop model "parks as classrooms" programs. Everglades and several other parks with established education programs were asked to provide NPF with examples of previously produced curriculum materials. These materials were used as examples of the kinds of things the NPF "Parks as Classrooms" programs would build upon if the Pew Charitable Trusts could provide the funding. We saw an opportunity to make our pipedream become a reality!

On August 24, 1992, Hurricane Andrew struck south Florida and nearly blew that reality out the window. The park was still heavily involved in hurricane recovery when the NPF solicited requests for proposals for three-year model "parks as classrooms" grants in early 1993. Park staff had lengthy debates as to whether we could commit to a major three-year project while still rebuilding from the hurricane. It was finally decided that we would live to regret it if we didn't at least prepare a grant proposal.

Preparation of the Grant Proposal

We soon found that the decision to apply for the grant was the easiest one we would make during the entire project. There were a lot of questions to answer before we could prepare the grant proposal. Who should be the target audience? Should we go high tech? Interactive CD-ROM? The Internet? Who do we go to for matching funds? How do we, or should we, train teachers to use whatever we produce? Should we field test the materials? If so how? How would we evaluate the effectiveness of the materials produced? To get the answers to these and hundreds of other questions we solicited input directly from park education staff, classroom teachers, principals, students, and curriculum developers.

Teachers asked us not to go high tech. Even in Florida, where every public school was to have at least one video disc player by 1996, most teachers didn't know how to use the equipment or have the time to learn. They suggested developing written lesson plans integrated with a visual component. Teachers also insisted that activities include the supplies and materials needed to conduct the activities. One comment we heard over and over was, "You know there's lots of great curriculum materials out there but it seems like every one of them needs a list of supplies and materials a mile long! We don't have the time to get all of those materials together." Finally, we were told that students tend to be visual. They like to see what they are experiencing.

Park staff, and twenty-five years of experience with on-site programming, told us that we could not expand our existing on-site program without additional staff. Even if we were able to get additional staff, which is highly unlikely, the park resource could probably not accommodate any more groups coming on-site. The staff's recommendation was that the curriculum be designed in such a way that teachers and students who may never visit the park in person would still be able to learn about it in a hands on, exciting way in their own school. Experience has also taught us that teachers participating in our on-site programs are much better prepared if they have participated in a pre-visit workshop. Teachers agree.

There was consensus among everyone we spoke to that whatever we develop we do it using the KISS principle. Keep It Simple Stupid! Using that premise we decided to develop materials for a target audience that we were already familiar with. Fourth graders have been participating in our on-site program for more than twenty years. Over the years we have developed hands-on interactive activities that have been extensively field tested by the more than 10,000 classes that have participated in the on-site program. It was decided that the best of these activities, with minor modifications where necessary, would be incorporated into the curriculum.

The proposal indicated that we would produce an all inclusive teacher/student friendly curriculum package, including written lesson plans, a video integrated with the lesson plans, a pre/post test, evaluation cards, and all of the materials needed to conduct the activities in the lesson plans. It stated that we would produce the package, distribute it to every fourth grade teacher in the state of Florida (over 7,000 teachers) and train them in the use of it.

The curriculum would consist of three units. Each unit has a brief (five to ten minute) introductory and concluding video clip and three hands-on activities. Teachers would be instructed to view the introductory clip to the first unit, turn the video off and conduct the three activities with their class. Upon completion of the activities they were instructed to have their students watch the concluding video clip for the first unit. This sequence is then repeated for the other two units. The final fifteen minutes of the video was proposed to be for teachers only. It shows teachers and their students participating in several of the activities.

Unit I, The Park Story, looks at why we have national parks, it locates the national park sites in Florida, and focuses in greater detail on Everglades National Park. The second unit, It's all About Water, explores the important role that water plays in south Florida. Unit III, Depending on Each Other, examines the interrelationships of the plants and animals in the Everglades ecosystem. A special emphasis is placed on the rare and endangered species.

Curriculum Production

In July 1993, Everglades National Park was awarded a three year, $175,000 grant by the National Park Foundation to produce *Children Are the Future of the Everglades*. That's when the hard work really began! The first task was to create an advisory/review board. The state board of education, teachers, principals, curriculum developers, South Florida Water Management District, state parks, local school districts, and Everglades National Park were represented on the advisory board. Much of the first year was spent in video production, selecting and modifying appropriate activities, and finding matching funding (this was ongoing throughout the project). The second year consisted of field testing materials, writing, reviewing, rewriting and putting into final format the activity guide. Year three consisted of the actual production, packaging, and distribution of materials and the training of teachers. While each phase of the project presented its set of challenges the first and beginning of the third year were probably the most challenging. In year one a video contract had to be awarded. All stages of the video had to be carefully reviewed by park education staff, scientists, curators, and attorneys. Initially we thought finding matching funds was going to be a problem. However, when we tallied the park's in kind contributions in terms of salaries, equipment, mailing costs, etc. we found that we soon met the $175,000 match. As the project proceeded many other groups and individuals also came forward to offer their support.

Partners

Someone came forward to help us deal with every challenge. When we asked where we were going to assemble and store 9,000 boxes and all of the materials that need to go into each box (200-page guide, one-hour video, evaluation card, two plastic trays, thirty-six sets of colored photographs, three color coded zip lock bags, thirty-six safety pins, a piece of limestone, a park brochure, and two large sponges), the park's research branch offered a solution. They had a large modular facility that had been rented as temporary office space while their offices were being rebuilt form the hurricane. It became the perfect storage/assembly plant for the curriculum for a three-month period.

The cost of collating and assembling the nine thousand kits was much more than we had ever envisioned. The park's contracting office came to the rescue! The park had a cooperative agreement with the Greater Miami Service Corps. This group of at risk young people from Miami did a fantastic job of packaging and assembling the kits for much less than what it would have cost us on the open market. It also gave us an opportunity to expose these inner city youths to the greater Everglades ecosystem!

We wanted to have a full color cover for the front of the activity guide but the costs appeared to be prohibitive. The South Florida Water Management District (SFWMD) heard of our dilemma. SFWMD is a state agency responsible for managing south Florida's water supply. They have their own print shop, offered to print the guide for us at no cost and when they found their shop was unable to do the job contracted someone else to do it. This is just one of many collaborative efforts that the park and the SFWMD have worked on to achieve common goals of the two agencies.

In the grant proposal we suggested that park staff travel around the state to train facilitators in turn who conduct workshops for other teachers in their school districts. Unfortunately, there were no funds to pay stipends to the facilitators and it was very difficult to recruit volunteers to serve as facilitators. In the summer of 1995 I received a call from a media specialist with Orange County Public System Television. He heard we were trying to figure out a way to train seven thousand teachers and thought they might be able to help us out. On January 31, 1996 a live teleconference workshop was broadcast to every public school in the state of Florida. Orange County provided those schools who could not pick up the satellite feed a 1/2" VHS tape of the workshop.

A presentation at the state conference of science coordinators resulted in a commitment from them to store the kits at warehouses within their school districts and distribute them to every fourth-grade teacher in their district prior to the teleconference workshop. In addition to solving our distribution dilemma, this greatly reduced mailing and storage costs.

A local gravel company, Florida Rock and Sand, provided us with nine thousand pieces of oolitic limestone for one of the activities. Publix Supermarkets graciously donated nine thousand salad trays for the activity "We're Sponging Off the Everglades."

This project could not have succeeded without the support of a lot of people. Many of them would not have become partners if we had not asked. One thing that we learned in developing "Children Are the Future of the Everglades" is to not be afraid to ask for support. It was amazing to see who wanted to support us once they knew we had a need.

The Future

To date over one hundred evaluation cards have been returned. Average post-test scores are nearly 50% higher than pre-test scores. Next school year additional evaluation cards will be solicited, enabling us to measure the effectiveness of the curriculum. The National Park Foundation will be using the curriculum as a basis for a case study that is being done to promote the nine multiyear model "Parks as Classroom" projects that will be completed in August, 1996. In 1997 Everglades National Park will be celebrating its fiftieth anniversary. As part of that celebration we are working with the Governor's office to declare an "Everglades Awareness Month" (May 1997?). During that month teachers will be encouraged to use the curriculum to teach a unit on the Everglades. Another teleconference workshop is planned for 1997.

Active Participation!

During the second hour of this workshop, attendees will be participating in the curriculum activities.

CHUGACH ENVIRONMENTAL EDUCATORS TEACH IN THE RUSSIAN FAR EAST

Elaine Gross
Glacier Ranger District
Chugach National Forest
P.O. Box 129
Girdwood, AK 99587

***ABSTRACT**: In 1993, the Chugach National Forest was selected to become a "sister forest" with the Magadansky Nature Reserve in the Russian Far East. Through the Sister Forest Agreement, both parties have established a relationship for exchanging ideas, expertise and technology on a variety of ecosystem management and environmental education topics.*

***KEYWORDS**: Environmental education, sister forest program, field studies, expedition, exchange.*

Background

As part of the 1994 Sister Forest Program with the Magadansky Nature Reserve, it was agreed that the Chugach National Forest staff would work with the Reserve on an ecological education curriculum. The curriculum was used for the 1994, 1995 and 1996 Magadan Regional Environmental Field Expedition for Students (MREFES). Before the Forest Service became involved, MREFES was an established annual field expedition which had run for three prior years on the Koni Peninsula, 80 km southeast of Magadan. In 1994, the following organizations in addition to the Forest Service supported the program:

—Magadanskiy State Nature Reserve
—Institute of Biological Problems of the North
—Okhotsk Fisheries Administration
—Ecological-Biological School #27
—National Audubon Society, Alaska/Hawaii Regional Office (Anchorage)
—Dimond High School (Anchorage)

Goals of the Program:
**Teaching students the skills necessary for living self-sufficiently and with minimal impact over an extended period of time in the wilderness.
**Conducting field research in the areas of botany, zoology and ecology.
**Working toward realization of a joint program with Chugach National Forest concerning methods of environmental education used in the United States.
**Collecting specimens for sustained use by Magadan's schools and also for use by the Institute of Biological Problems of the North (IBPN).
**Introducing an ecological consciousness to high school students through field experience.
**To prepare high school and college students for professional field work.

The 1994 MREFES participants included 30 Russian students, 6 Russian leaders, 4 Dimond High School students, 2 Dimond High School teachers, 4 Forest Service employees, and 3 Audubon Society interpreters. The expedition camp located near the mouth of the Asatkan River on the Koni Peninsula ran from July 2–July 29, 1994.

The 1995 MREFES participants included 17 Russian students, 4 Russian leaders, 2 Forest Service employees, 3 American student interns and 1 interpreter. The expedition camp was located on the Koni Peninsula at a different location than the 1994 camp, approximately 50 km from Magadan and ran from July 1–August 6.

Forest Service Participation in the Expeditions

The curriculum centered on environmental awareness, action, and ethics. In 1994, Chugach National Forest employees Elaine Gross, Lois Ziemann, Beth Jennings and Connie Hubbard participated in the expedition. In 1995, Elaine Gross from the Chugach and Bob Loudon from the San Bernardino National Forest participated. In 1996, Irene Lindquist from the Chugach participated. With the help of translators, they led sessions that focused on ecosystem connections and resolving resource conflict issues among users with different values. They made use of role-playing scenarios and "active learning" games and activities. In 1994 and 1995, the curriculum that had been developed could not be adhered to very closely because of various problems including bears in camp, foul weather that led to survival mode instead of educational mode, and small group composition changing every day which complicated attempts to conduct sequential learning activities. In both 1994 and 1995, it was quickly discovered that camp life in general did not lend itself to structured learning. It was best to plan for the moment rather than try to plan ahead.

Forest Service employees led classes with original American methods on several themes, including:

- —Relationship of humans to wildlife, rules of behavior in bear habitats, and bear safety.
- —Organization of the Forest Service—mission, multiple use, purpose.
- —Forest fires and their effects (negative and positive) on forests.
- —Culture and traditions of native Alaskans.
- —Archaeology and cultural resource protection.

One problem with all the classes was the fact that Forest Service participants were unable to communicate with the students in Russian, and classes were conducted with the assistance of translators. The language barrier was eventually overcome as both teachers and students became more adept at understanding each other.

Due to their experience, qualifications, enthusiasm and optimism, the Forest Service participants continue to make valuable contributions to both the educational program and daily camping routine of the expedition. Every effort is being made to continue and expand this cooperation.

Concluding Remarks

Both 1994 and 1995 MREFES (at the time of this writing, 1996 MREFES has yet to happen) were fairly successful. Due to extended periods of rainfall and bear problems (1994), it was necessary to cancel and/or shorten some excursions inland and along the ocean shore. High seas and frequent offshore winds also made it impossible to conduct sufficient analysis of plankton.

These recommendations were made by Forest Service participants after the 1994 expedition:

1. Boat safety: The tugboat used to transport participants from Magadan to the base camp and return had some serious safety shortfalls. Being a tugboat, there was only bunkspace for 10, not 45 that were transported to camp. There was very little survival gear on the boat. Explore the possibility of caching survival suits, lifejackets, fire extinguishers and other supplies in Magadan. A fairly safe boat was used in 1995.

2. Bear safety: A firearm and someone trained to use it should be available at the base camp and with every group that leaves the immediate camp area. A food cache should be built for storage of food. Bear-resistant containers are highly recommended. It was recommended that base camp not be located in the same place as it was for 1994 and two years previous to that. It was also recommended that the camp NOT be located at the mouth of a creek with an active salmon run occurring during the camp period. In 1995, the camp was located on a windy outcropping. Bears were not a problem, but the weather was consistently poor.

3. Communications: While there was a short-wave radio in camp, it did not appear as though it ever worked. Fortunately, there were no life-threatening situations. In 1995, there was a radio available at the weather station nearby.

4. Tools and Supplies: Most everyone in camp helped with fire-tending, which often required the use of axes, hand and crosscut saws. Almost without exception, they were dull and rusty. Forest Service participants should go armed with files, jigs and tool safety messages.

5. Emergency medical services: All Forest Service employees should be trained in first aid and CPR at a minimum. It would be beneficial to have someone in the American cadre who is trained in backcountry EMS and had an array of first aid supplies in the event of major injury or illness.

6. It was recommended that the number of participants be reduced so that the camp area was not so impacted. Other benefits to a reduced number includes less food preparation, easier transportation arrangements, and less firewood needed for cooking. In 1995, the number of participants was reduced to 17.

Despite the various misadventures of the Forest Service participants, both 1994 and 1995 were positive experiences for all involved. The Russian students and Russian leaders/teachers are wonderful people. Fond memories of newly charted friendships, the beauty of the Russian Far East landscape, and teaching environmental education on the shore of the Sea of Okhotsk will live on. The expedition is an excellent way to provide hands-on experience in scientific studies to the individual student, while at the same time, improving trust and understanding on an international level.

"CONSERVATION CARNIVAL": AN INNOVATIVE CONCEPT IN NATURAL RESOURCE EDUCATION

David A. Dutton
Park Ranger
U.S. Army Corps of Engineers
P.O. Drawer 186
Sardis, MS 38666

ABSTRACT: *Planning and executing a successful multiagency environmental education event requires substantial "partnering." Interagency environmental education programs require the formation and nurturing of partnerships, and since all public agencies have mandates to involve their respective constituencies, pooling resources to conduct environmental activities provides an excellent way to fulfill this requirement.*

KEYWORDS: *Partnerships, interagency, environmental education.*

Introduction

What exactly are "conservation carnivals?" For the purposes of this paper, they are broadly defined as multiagency cooperative endeavors focusing on environmental awareness and conservation ethics.

Specifically at Sardis Lake, the concepts of stimulating an awareness among children about their natural surroundings and providing a fun atmosphere in which to do it, are painstakingly forged during round-table discussion with all the participating agencies prior to the actual event. From these discussions emerges a consensus—clearly defined goals for the activity. A completely thematic approach to the carnivals was simply not possible due to the diversity of agencies/personnel involved in conducting presentations. Consequently, through innovative interpretive techniques stressing hands-on activities, the children are exposed to a wide array of natural resource topics/issues.

Method

The Sardis Lake carnivals involve busing local elementary students (fifth grade) to the site and rotating them through mini-seminars conducted by federal, state, and private resource agencies. Originally a regional carnival approach involving area schools was considered. This idea was subsequently abandoned because of the excessive travel time involved for many schools.

Throughout the festivities, each class is identified by an environmental placard (that is, beetle, bear, fish, sun, etc.) which is carried by a volunteer. Each student also has pinned to their clothing the same environmental "logo" as their class placard. This is arranged with the school and teachers prior to their arrival. In this way, the students and teachers stay together as a class throughout the day. Volunteers help escort each class from one environmental seminar to the next according to a rotation schedule. All presentations last 20 minutes, with 5 minutes allowed for travel to the next destination. To signify the end of each session, a siren sounds, and the children rotate to their next scheduled stop. This is a strictly regimented timetable, and all the presenters conduct their presentations within the allotted time. An introductory talk and follow-up session, bathroom break, and lunch are all factored in.

Pre–, On–Site, and Post–Conservation Carnival Checklist

While planning "conservation carnivals," Corps staff worked very closely with graduate students enrolled in the University of Mississippi Exercise Science and Leisure Management Program, local elementary principals and faculty, agency representatives, resource personnel, community volunteers, businesses, and others. The following "to-do" list, while not necessarily in chronological order, will nonetheless be helpful in the overall planning and implementation of an interagency environmental education event:

- Develop and have printed "Conservation Carnival" certificates for each student who participates.

- Develop "Conservation Carnival" evaluation forms for students, teachers, presenters, and volunteers. These will provide very valuable feedback about the event.

- Develop a short video which can be used to help promote the carnival concept to area educators, merchants, and participating agencies.

- Sponsor a "Conservation Carnival" poster contest among the participating schools (could be accomplished on a class-by-class basis), the winners to be announced at the carnival and their work proudly displayed.

- Determine the on-site placement of presenters, taking into account any special needs. For instance, maybe a presenter requires electricity or a pond/stream if they are conducting a wetlands program.

- Photograph/videotape the event.

- Collect "Conservation Carnival" evaluation forms from teachers, students, presenters, and volunteers. Presenters particularly want to know how they were received by the students. Compiling and evaluating this information is essential and provides feedback to the presenters.

- Write follow-up press releases as necessary, and coordinate all publicity for the event.

- Conduct a follow-up critique session involving as many of the presenters and volunteers as possible to openly discuss the event.

- Develop and mail out an informational primer for teachers, volunteers, and presenters that explains where to meet, what to do, what to expect, duration, and other pertinent details.

- Develop a rotation schedule. This schedule factors in arrival and departure times, opening and closing ceremonies, topic sessions, and bathroom and lunch breaks. It is always better when putting together a rotation schedule to have more presenters than classes participating. This will allow a break for presenters sometime during the activity. It can become awfully grueling for any interpreter to conduct eight or nine consecutive sessions without a reprieve. A factored break also allows presenters the opportunity to view the carnival themselves.

- Actively recruit presenters from local, state, private, and federal resources.

- Coordinate all on-site volunteer activities. Ensure that volunteers that are chosen to lead the classes around have a map and rotation schedule. It is always helpful to arrange to meet volunteers early and go over any specifics so that they can familiarize themselves with the layout of the site.

CREATING COMMUNITY FOR THE FUTURE: A HIGH SCHOOL STEWARDSHIP PROGRAM

Jill Torres, Park Ranger
Division of Interpretation
Presidio of San Francisco
Golden Gate National Recreation Area
Fort Mason, Building 201
San Francisco, CA 94123

Sharon Farrell, Natural Resource Specialist
Division of Resources Management
Presidio of San Francisco
Golden Gate National Recreation Area
Fort Mason, Building 201
San Francisco, CA 94123

ABSTRACT: *To understand the importance of the environment one must work within it. At the Presidio of San Francisco (Golden Gate National Recreation Area—GGNRA), high school students learn about their environment by actively improving it through a six part education program, mentorships, internships, and community service learning. Students act as "park stewards," restoring native habitat, learning new skills, and developing a sense of environmental responsibility that is ultimately extended into their urban community.*

KEYWORDS: *Student stewardship, high school, environmental education, service learning, curriculum based, community partnerships.*

Introduction

Urban youth and National Parks, what could they possibly have in common? As an urban national park, the Golden Gate National Recreation Area has been grappling with this conundrum for some time. At the Presidio of San Francisco we have initiated a six part education program to engage students as "park stewards" whereby the students perform the seasonal activities of our Natural Resources Branch. The program has now expanded to include mentorships, internships and community service learning. High school students and parks, as it turns out, have more in common than we originally suspected. Students are eager to learn outside their traditional classroom, are excited to see their work progress, and enjoy knowing their work makes a difference. The park gains a diverse constituency while acquiring more scientific information and real results from student involvement. Teachers also benefit through dynamic instruction, they develop better relationships with their students, and they learn more about their local resources. This link between the high schools and our park also generates large support from the local community. We've discovered that education programs like this one spark the interest of many people. Education in our parks does foster a long-term environmental ethic within urban youth.

High School Stewardship

Having students become "stewards" of our park is impossible within a single visit. Rather, visitation must be long term so that the students can see and understand the changes within the park. We created a program with six modules that follow the seasonal activities of our Natural Resources staff. Once a month, students come to their adopted habitat restoration site to learn and participate in a variety of activities. Projects in which they participate include:

- September/October: introduction to site/habitat restoration
- November/December: plant propagation in native plant nursery
- January/February: outplanting of nursery seedlings
- March: invasive non-native plant removal
- May: monitoring/mapping
- June: plant propagation/exploration of extending skills to student's community/final projects gathering

Students are fully engaged in our resource management tasks, making collective decisions within their groups and applying critical thinking and decision making skills. The students work in small groups with a park staff member, which creates a comfortable atmosphere for students in which to interact and ask questions.

At the culmination of the program, students are asked to create a group final project. Students from all the participating high schools gather to display their projects and share their experiences. Students see they are part of the larger program within the park. They are then challenged to bring their new or refined environmental ethic beyond the park's boundaries and apply it to their own communities.

Mentorships

During the school year, our park also conducts a middle school program based upon similar resource management issues. We decided to involve some of our high school students as mentors for the younger students. We wanted the high school students to further their sense of stewardship and increase their leadership abilities, the middle school program became the perfect opportunity. Working with the teachers, the high school students receive credit for their work, and add a tremendous amount to the program. The mentors explain the tasks at hand in a way that the middle school students can understand. Essentially, the high school students relate to the middle school students in a different manner than Park Staff. They create a relaxed, comfortable environment for everyone.

Having a diverse teaching staff with volunteers, interns, Park Rangers, and the addition of high school mentors, middle school students not only learn new habitat restoration concepts, but also explore vocational opportunities available to them in both the immediate and long term futures. The high school mentors self-esteem rises tremendously, while their school attendance and classroom work also dramatically improves. By placing the responsibility onto the high school students, just as in the regular program, the students want to rise to the occasion—and do.

Internships

Many of our high school students expressed interest in working at the Presidio during their summer break. We saw this as a stepping stone for future vocational opportunities and an opportunity to expand their sense of stewardship. Through the internship program, the high school students either receive school credit or a small stipend, or volunteer their time. The students become full-fledged staff members for the summer, working alongside more experienced interns or park staff. The interns work 40 hours per week, complete individual projects, and assist in a variety of activities. They conduct census-monitoring, seed gathering, plant propagation, and most importantly, help evaluate and implement changes to the regular high school stewardship education program. Their input is crucial to the program's success. We've already made several changes to the education program, adapting it to meet their ideas and suggestions, which most often are the best ones! Again, giving high school students responsibility creates high self-esteem within the students, creates a better educated "park steward" and improves the overall education program.

Community Service Learning

More and more high schools are implementing a new program called "Community Service Learning." The idea is to allow students to explore their community and learn what they can do to help it. The students are required to complete a set amount of hours for graduation. Students work with organizations ranging from convalescent homes, to homeless shelters, to our park. Many students who undergo our regular high school stewardship program conduct their community service hours with us. Every Saturday we have a regular volunteer day in which we work at various habitat restoration sites and our native plant nursery. The high school students completing their "hours" have been a great help on these days. Already knowing some of the work, they help us teach new volunteers. Their community service learning thus becomes more than working with the environment; it also teaches them social participation skills.

Partnerships and Support

Conducting a program of this nature is not easy without the support from both within and outside the park. Support within the park comes from our management, funding comes from our Park Association, and our teaching staff is made up of volunteers, interns, San Francisco Conservation Corps (SFCC) members, and the limited NPS staff. Like the mentorship program, SFCC Corps members diversify our teaching staff creating an environment where high school students can better relate with their instructors.

The school district, excited to create a connection between the park and their high schools, hired a consultant to get the ball rolling. Once the program was in action, the school district received an educational grant to support the teachers involved with the program. The grant has allowed the teachers to have in-service days to meet and to communicate electronically. In addition, the district's science specialist makes himself readily available to the park and the teachers.

The local public transportation system (MUNI) provides the schools free chartered buses under their community service program. This enables us to have schools from distant districts participate in the program.

Conclusion

The High School Stewardship Education Program at the Presidio of San Francisco is an exciting and challenging program that is growing everyday. As we learned through our mentoring, internships, and community service learning programs, the conducting of education programs must be fluid and flexible in order to allow room for growth. High school students *do* care about their environment and *do* want to take action. We, the park staff, simply need to provide students with the tools to do so.

EARTH STEWARDS: PARTNERSHIP-BASED ENVIRONMENTAL EDUCATION

Jamin A. Thomas
Public Affairs Specialist
Midwest Science Center
Columbia, MO 65201

Gary W. Mullins
Professor of Ecological Communications
The Ohio State University
Columbus, OH 43210

***ABSTRACT**: "Earth Stewards" is a pilot program being developed at five sites across the United States. Each site works through partnerships with a local school, other agencies, organizations, and individuals at a community level to develop a curriculum and education activities focusing on a theme of regional significance. Participants integrate scientific, historic, cultural, and economic aspects of themes into the existing curriculum. The lesson plans will be supported by a Program Guidebook that will be available to any interested teacher once the pilot phase is complete. This presentation includes an overview of the project's concept, examples of activities and lessons implemented at the five sites, a summary of assessments conducted, and implications for the future of the Earth Stewards program.*

***KEYWORDS**: Partnerships, environmental education, earth, stewardship, hands-on.*

Concept

Earth Stewards is a pilot program to maximize the use of Fish and Wildlife Service (FWS) and National Biological Service (NBS) expertise to educate school children and communities about fish and wildlife resources and local conservation problems. The program was developed by the FWS' National Education and Training Center (NETC) in cooperation with the National Fish and Wildlife Foundation (NFWF), and is being piloted at 3 FWS and 2 NBS sites (Pleasantville/Atlantic City, New Jersey; Columbia, Missouri; Lafayette, Louisiana; Willow, California; and Anchorage, Alaska). The concept for development of the program was that education programs involving resource professionals within the community continue to be underutilized and under-funded in the budgets of resource agencies. Earth Stewards showcases the utility of environmental education to resource conservation when teachers and resource professionals are given the support, training and adequate funding to work together and develop cooperative programs for children and the community.

Earth Stewards' objectives are:

- Integrate conservation education topics into the school curriculum
- Provide environmental education methods training
- Develop schoolwide, topic/issue-based programs
- Implement a community based stewardship project
- Recruit program partners
- Provide off-school nature experiences
- Develop a Program Guidebook
- Implement program evaluation
- Develop integrated research-based activities
- Provide an orientation to natural science careers

Activities

Earth Stewards builds on existing programs, including "Scientists in Schools" and the British "Morning Program." Resource professionals and teachers develop yearlong curriculum plans which involve an entire school and the community it serves in the complexity of a local resource issue. The program focuses on one specific topic and deeply involves students by introducing multiple perspectives with each educational activity. For example, in Columbia, Missouri, the theme of "Big Rivers" was chosen because of the state's dependence on the Missouri and Mississippi Rivers and because of a general lack of elementary-level education materials available on the topic. Through directed hands-on activities, students in grades K–5 can understand the diverse connections people have to river resources, how these ecosystems are unique and valuable, and what citizens can do to conserve as well as enjoy the resource. Themes at the other pilot sites include wetlands, endangered species, and subsistence management.

One of the strengths of the program is the freedom each site has to develop activities unique to its theme and partner school:

- The NBS's National Wetlands Research Center in Lafayette, Louisiana, has integrated "wetlands" into the existing science curriculum. ES funding has provided basic school materials and field trips to the Atchafalaya Basin and Avery Island. Science and Conservation Day activities, including waterfowl migration demonstrations and an endangered species display, have enhanced the normal curriculum text for teacher, students, and parents.

- The NBS's Midwest Science Center has developed teacher training on "big rivers," implemented a "Kids Fair" in which the entire school has visited the Center and participated in hands-on activities about rivers provided by program partners, conducted "Storm Drain Stenciling Project" and "Stream Team Cleanups" as community stewardship projects, and taken all the students on field trips to the Missouri River. MSC has developed strong partnerships with state and federal agencies and the community of Columbia to implement the program.

- FWS's Office of Subsistence Management has integrated Alaska Native culture into the curriculum through classroom activities and guest speakers. Participants have highlighted the history and traditions of cultures represented within the school population. A focus on the historical and personal relationships to the land has been an integral part of studying the tradition of subsistence. Teachers received an orientation session on Alaskan Native culture, and the school hosted a "Native Alaskan Week."

- FWS's Ecological Services-New Jersey Field Office has developed a first-of-its-kind endangered species curriculum focused on State and federally-listed threatened and endangered species. Teachers from the partner school adapted and modified exercises from the curriculum to fit their core subject areas: reading, writing, mathematics, and art. Additionally, each grade selected an endangered species stewardship project. Activities included a pine barrens tree frog sing-along; an interactive presentation with diamondback terrapins; and the creation of door plaques representing every state and federally listed threatened and endangered species in New Jersey. FWS personnel have led nature hikes at a nearby refuge. The second-year theme was "wetlands," and students, parents, and teachers restored a wetland on the school property that will be used as an outdoor classroom.

- FWS's Sacramento National Wildlife Refuge in California chose the theme "Wetlands, Waterfowl, and You!" The site's goals have been to (1) provide an awareness and understanding of wetland values and management practice, endangered species, biodiversity, and ecosystem relationships and (2) provide a means of dissemination of wetland values, awareness and stewardship to local communities, organizations and schools in the northern Sacramento Valley. The entire seventh-grade class at the partner school studies waterfowl, wetland plants, soils, and water through many interdisciplinary activities.

Assessments

One of the primary objectives of the Earth Stewards program is to implement evaluations of individual activities at the various sites as well as the program as a whole. Staff at the Ecological Communications Lab, School of Natural Resources–Ohio State University, have worked closely with site coordinators and the FWS NETC to develop and implement assessments. Activities have been evaluated as have the opinions of the program's "stakeholders" (resource professionals, partners, and teachers/school administrators). Overall, the program has been embraced by participants and is meeting program objectives. Stakeholders have voiced concern over certain components, including lack of time and funding support.

Future

An Earth Stewards Program Guidebook is being designed to pull together the various lessons and activities developed at the five pilot sites since 1994. The sites will be completing education kits related to their chosen themes and finishing lesson plans over the next year. Once program assessment is complete, the FWS NETC will work with site coordinators and NFWF to complete an Earth Stewards "guidebook" that can be used by any school resource agency in the country.

References

Black, Susan. 1993. Morning programs revisited. *Educational Leadership* 50(7): 50–52.

FINDING YOUR SPACE WITHIN THE NATURELINK PROGRAM

Kelly Barnett Heller
Instructional Designer, NatureLink Facilitator
Sea World of Florida Education Department
7007 Sea World Drive
Orlando, FL 32821

***ABSTRACT**: NatureLink was developed by the National Wildlife Federation in 1993 in the hopes of exposing families to the environment. In September 1995 Sea World of Florida hosted the very first NatureLink weekend in the State of Florida. The weekend attracted 46 participants from 12 different families for an educational and fun-filled outdoor experience.*

***KEYWORDS**: Conservation, environmental education, interpretive, experiential learning, partnerships, families.*

Introduction

NatureLink is a program developed by the National Wildlife Federation and hosted by organizations across the country. NatureLink is a weekend designed to "link" families to nature through hands-on environmental activities such as fishing, canoeing and nature hikes. This program allows both the host organization and the National Wildlife Federation to maintain a long-standing partnership and commitment to environmental education. NatureLink also provides strong environmental values and positive role models for local families. By working with local businesses and contributors, volunteers and mentors, participants are exposed to the ultimate in environmental education.

Sea World of Florida's involvement with the NatureLink program began in the fall of 1994. Several states including Pennsylvania, Colorado, and Georgia had successfully conducted NatureLink weekends. Anxious to be part of such a worthy program, Sea World of Florida's Education Department accepted the challenge to host a program in 1995. And thus began one of the most memorable experiences for all those involved!

Getting Started

The planning began after committing to become a host site for the NatureLink program. An executive committee was established to help oversee and guide the program. The first major task for the committee was to recruit more volunteers willing to help with the planning of the program (little did we know, but this would be more difficult than ever imagined!). In addition to finding volunteers, another major partner was needed to meet with the National Wildlife Foundation's standards. The Orlando Science Center accepted the challenge and joined the blossoming NatureLink effort. A tentative budget was established that included initial seed money from the National Wildlife Federation, and additional monies needed for program costs, volunteer, mentor and scholarship registrations.

Fundraising

Fundraising was difficult for us because of Sea World's for-profit status. We quickly adjusted our fundraising strategy to emphasize that Sea World was only a sponsor of the event and to stress that the NatureLink program itself was nonprofit. Most of our fundraising efforts concentrated on guesswork which usually consisted of looking through the yellow pages and picking prospective donors. Both pitch letters and personal phone calls were used to try and acquire support, but most donations were achieved through simple word of mouth. Slowly, but surely, donations of products and finances were contributed by local companies. By the time the program rolled around we had enough products to award to each of our families. Orlando Magic basketballs, T-shirts, and stickers; fishing poles; gift certificates to local restaurants and even a family portrait were among the many product donations received.

Choosing the Site

Choosing the site for the program turned out to be less troublesome than some of our other major tasks. Luckily, Florida is a state with many natural parks and nature centers suitable for a program such as NatureLink. It was important for us to select a site that would allow for ample fishing, canoeing and nature walks, while staying within our (small) budget. We found an Episcopalian Retreat Center located near Orlando in a small town called Oviedo. Acres of lush hardwood hammock, pine scrub, and a beautiful lake became the setting for Florida's NatureLink program.

Recruiting Participants

For several years now, the Sea World Education Department has coordinated a summer camp program called Camp Sea World. More than four thousand children attended in 1995 and each received NatureLink information. The National Wildlife Federation also provided us with a list of Central Florida subscribers to the *Ranger Rick* and *My Big Backyard* magazines. We tentatively set a registration goal of fifteen families, including both paid and scholarship registration. Five scholarship families were chosen and sponsored by the Orlando Science Center, the Orlando Magic Youth Foundation, and Sea World of Florida. A final count of forty-five people consisting of thirteen families participated in the weekend.

Planning the Weekend

Program scheduling for the weekend came easy. Friday's schedule centered around registration and check-in and an introduction to the program theme of wildlife conservation. Families were encouraged to meet with their NatureLink mentors and become familiar with the site itself. Several icebreaker activities were conducted, including one called the Web of Life. Participants, mentors, and volunteers formed a large circle in order to simulate a web. A large ball of yarn was tossed to each person within the web, who in turn would then introduce himself and state their purpose for participating in the NatureLink program. That person then held onto a piece of the yarn and tossed the rest of the ball to someone else. The process was repeated until everyone had been introduced. Once the web was complete, the concept of conservation was introduced by explaining that the NatureLink web was very similar to the natural web of life. Each volunteer and mentor then named one thing that is destructive to the web of life while walking through the web itself. This activity had a tremendous impact upon the families and served as a simple introduction to the weekend. Early evening brought a lesson in astronomy donated by the Central Florida Astronomical Society. Jupiter, Saturn, and various asterisms were all part of the celestial show.

Saturday began with an early morning trip to Sea World to learn about endangered manatees and sea turtles, as well as local efforts to protect them. Upon returning to the site families were treated to many activities including canoeing, fishing, nature hikes, as well as instruction on boating safety, backyard habitats, butterfly gardens, and recycling and composting. Saturday evening came to a close with a barbecue and campfire stories about nature.

Sunday morning was used as a time of reflection; families were encouraged to explore and experience their new found interest in nature and wildlife. A non-denominational sunrise service was held in a beautiful chapel overlooking the lake. Families raced around for last minute fishing, canoeing, and nature hikes before attending lunch and the closing ceremonies. Part of the NatureLink program is based upon continued contact and follow-up with families and mentors. Families are encouraged to make an Earth Pledge naming something productive to help save the environment. As a final activity, the Web of Life was conducted again, with each participant again stating their name and what they could do for the environment. Eleven months of intensive planning, heartache, and struggle had finally culminated in a wonderful learning experience for everyone. After many hugs, tears, and address swaps, we finally bid our NatureLink family good-bye. I was left with both a profound feeling of sadness, and an overwhelming sense of pride for what had been accomplished.

Looking Back

"Hindsight is 20/20." This saying had more meaning than ever for our NatureLink committee! Although our program was an overwhelming success, we did experience all of the trials and tribulations to be expected in planning an event such as NatureLink. Our naiveté, along with some poor planning and disorganization, helped pave the way for the 1996 program. Our major fundraising problem came with the program association to Sea World. We now have NatureLink letterhead and envelopes which have helped in distinguishing the program as nonprofit. Another critical mistake occurred with our registration costs. In trying to keep costs as low as possible we mistakenly charged too little (registration fees didn't even cover meals and lodging expenses). A slight raise in program fees has helped our budget tremendously. We also realized that a more remote site would help reinforce the NatureLink concept. The site chosen for the 1996 program is approximately 45 minutes from Orlando centered on a 3,800-acre lake.

Overall, it has been an overwhelming experience to share the wonders of nature with others. Continued contact with families, mentors, volunteers, and sponsors has added to the magic of this very special program. The stress has continued with the planning for our second NatureLink weekend which will occur November 8-10, 1996; we are still somewhat disorganized and underfunded, but knowing that this year's outcome will again be magical keeps us sane. The NatureLink concept isn't revolutionary; it provides participants with a sense of space, wonder, and a belief in nature.

> *The old Lakota was wise. He knew that man's heart away from nature becomes hard; he knew that lack of respect for growing, living things soon led to lack of respect for humans too. So he kept his youth close to its softening influence.*
>
> —Chief Luther Standing Bear

FOCUS AND FUN FORM THE FRAMEWORK FOR FABULOUS HIGH SCHOOL FIELD TRIPS

Celese Brune
Naturalist
Seattle Water
19901 Cedar Falls Road SE
North Bend, WA 98045

Ralph Naess
Naturalist
Seattle Water
19901 Cedar Falls Road SE
North Bend, WA 98045

***ABSTRACT**: High school field trips built around a focused, real-life question can create a rich and rewarding day. Working with teachers and other agencies can further enhance learning through the development of pre- and post-trip activities that extend learning throughout the year.*

***KEYWORDS**: Environmental education, watershed, field trip methods.*

Introduction

Have you ever had that sinking feeling in the pit of your stomach when two fully-loaded high school buses pull up at your site, and you are not quite prepared? We did, in the first year of our program. But before the second year started, we adopted a new method which turned that sinking feeling into anticipation. Working closely with the King County Cooperative Extension 4-H water quality coordinator and biology teachers, we revamped the program. The technique we used can be applied to any area. We used this process at the 90,160-acre Cedar River Watershed, the protected drinking water source for 1.25 million people living in the greater Seattle area.

The Question and the Brainstorm

When we first arrived, the existing program consisted of spending the day driving around the Cedar River Watershed hoping to see some wildlife and doing some cool water tests, with no real purpose. This led to discipline and focus problems, and educationally speaking, a wasted day. That summer, we sat down with the Cooperative Extension coordinator, the City Environmental Education coordinator, and teachers to find a way to enhance learning and relevance. Inspired by a Teachers Workshop led by Sally Luttrell-Montes of the University of Washington, we decided to use a "focusing question" to build a curriculum which would make learning relevant, and relate to real world situations.

This field trip actually starts in the classroom with an introductory slide show (an introduction can easily be done on-site as well). Then we introduce the *essential question*. Our question is, "Should Seattle Water build a water filtration plant on the Cedar River?" Three important elements any essential question must have are: (1) Is this a real question you are trying to answer? (2) Is this question answerable given the time and resources available? and (3) Is the answer unknown to you? (If you know the answer, you can pretend you don't. If the students realize you already know the answer, it becomes "make work," and the process will not succeed.)

Next, students are informed that they will be working together in small groups to gather information, develop an answer and then create a five minute presentation for the rest of the class, one week after their field trip.

After introducing the question, we lead a brainstorming session to establish three things: (1) What do we already know about this problem? (2) What do we need to know about this problem? and (3) How are we going to find out? Through this student-driven process, the activities they will be doing in your area have relevance and purpose. Hopefully, they will identify things they need to know that can be answered on-site or through research. In our case, the questions they invariably came up with were (in various forms): (A) What is the condition of the Cedar River water now? (B) Why would we need to filter the water? and (C) How much is it going to cost? Fortunately, all of these questions would be answered on the field trip. Before leaving the school, appropriate activities and behaviors are discussed with both teachers and students, and students sign a contract which outlines their (and the coordinators') responsibilities. In this case, group dynamics and respect were established by running all classes through a "low ropes" course sponsored by King County Cooperative Extension, before they came on the field trip. The process of establishing relevancy and expectations sets the stage for a focused field trip with students empowered to form their own opinions and develop arguments to support their conclusion. Instead of a point and tell tour, students are now engaged in discovery and are searching for information that will help them answer the question.

The Field Trip and Hands-On Answers

After creating the introduction and inspiration phase, we then designed age-appropriate activities that would allow students to gather the information needed to answer the question! As you design your own program, you will probably find that some of the activities you are already doing are answering the "I wonder's?" that exist at your site (e.g., "I wonder just how good that water is?" or "I wonder how the salmon are affected by taking water out of the river to drink?"). We focused on three areas: water quality, water supply, and watershed management. In order to make it easier for the students to collect data and information, we created a workbook (desktop published in-house) with expectations, information, and instructions that leads them through the day, and through the activities. Each student is given a workbook, and is expected to fill it out completely for credit.

Water quality is addressed by visiting the water intake and treatment plant to describe the existing system, then using visual aids to describe three options for filtration, and how that would differ from our current system in terms of costs and quality. Next, we modified an activity, "Pass the Jug," found in Project WET (Introductory Packet, 1992) to explore the idea of competing demands. It involves Sprite, glasses, greedy high school students and an inspired delivery. From this activity, students have a basic concept of what the existing competing demands are on the drinking water source and how a filtration plant would help solve some of the problems. Before moving on, we use a small backpacking filter to demonstrate what a filter could do. Throughout the entire program, we try our best to give a balanced view, giving equal weight to each side of the issue. It's important to not let your bias show. Our next stop is the main reservoir, Chester Morse Lake. On the way to it, we travel through the closed boundaries of the watershed, often seeing wildlife, like elk, deer, bobcat, common loons, and (once!) cougar. At the lake, student teams equipped with water test kits perform three different tests on the water, to establish for themselves that it is high quality, (almost) ready to drink (Figure 1). Dissolved oxygen, pH, and phosphate kits were purchased by the high schools and Cooperative Extension for this purpose. Students also do a non-floristic mapping and soil percolation exercise (adapted from our college biology class), designed to heighten their awareness of the variety of habitats and landforms in the watershed. Finally, we conclude by repeating the questions generated from their initial brainstorm session (had they answered their initial questions?), and the *essential question*, challenging them to be creative in their answers (yes, no, and why or why not), and their presentations.

Figure 1. Students test the water for dissolved oxygen.

Presentations—What the Students Really Think

The presentations varied greatly in quality, some good, some bad, but they were fairly well thought out. They were approximately 50%–50%, for and against. In the "against" column, it was usually because of cost (since these students would be the ones who will have to pay for it), and in the "for" column, students emphasized the other users of the water (salmon, recreation, etc.).

Conclusion

Using an essential question that is relevant and needs an answer can not only make high school field trips a pleasure, they can actually help to generate good ideas for important issues facing natural areas. Although there is a fair amount of initial time investment required to make a program like this work, it more than pays for itself in the learning that goes on, and the satisfaction it creates for the naturalist!

Reference Cited

Western Watercourse. 1992. Pass the Jug, Water Education for Teachers, Activities, Introductory Packet, 26-29.

Additional References

Strong, Richard, Harvey Silver, and Amy Robinson. 1991. What do students want (and what really motivates them)? *Educational Leadership*, pp. 8-12.

National Center for Improving Science Education. 1991. *The High Stakes of High School Science*, pp. 63-69.

THE HERPLAB: LIVE REPTILES TEACH IMPORTANT ECOLOGICAL CONCEPTS

Philip R. Brown
Assistant Curator, Education Department
Santa Barbara Museum of Natural History
2559 Puesta del Sol Road
Santa Barbara, CA 93105

ABSTRACT: *The HerpLab (now known as the Lizard Lounge), an innovative reptile and amphibian display, is used not only for the identification of local species by the public but as a means of introducing them to a number of ecological concepts illustrated by the natural history of these animals. Such concepts as protective coloration, predator-prey relationships, and resource allocation can be demonstrated using live "herps."*

KEYWORDS: *HerpLab, Lizard Lounge, reptiles, amphibians, ecological concepts.*

HerpLab: An Idea Is Born

In June 1995, a live reptile and amphibian exhibit was temporarily installed in an education classroom at the Santa Barbara Museum of Natural History. The primary objective of this exhibit was to present the common local species of these creatures, which were otherwise underrepresented in museum exhibits, to the public. In addition to live specimens, hands-on materials such as skeletons, shed skins, egg shells, and models were provided. Selected children's books were available, and a video monitor allowed occasional showings of educational films. A trained member of the Museum Student Interpreters program was on duty at all times when the room was open to answer questions, allow limited handling of animals, and help visitors better understand the lives of these creatures.

Since this was not a traditional museum exhibit hall and was more interactive than other exhibits, it was designated a "lab," and the name HerpLab was applied to it (the study of amphibians and reptiles is herpetology). It was subtitled "Amphibians and Reptiles of the Santa Barbara Region" (as defined by the museum in its mission statement).

However, it was soon realized that these animals could also be used to demonstrate a number of ecological concepts that were not easy to otherwise convey in museum exhibits. Taking advantage of the natural draw that the live reptiles and amphibians presented, displays were created that incorporated the life histories of these animals into illustrations of some of these concepts. For instance, predator-prey relationships were shown in a bulletin board display where a model gopher snake was surrounded by an array of rat, mouse, mole, vole, and pocket gopher study skins. A caption pointed out that the snake could consume this many rodents in six months time, while a mounted eagle overhead with a (rubber) snake in its talons conveyed the idea that snakes are prey for other predators as well. More ideas along these lines were formulated as we planned for a more prominent, larger and more complex exhibit hall.

Phase II: The Lizard Lounge

While the new exhibit hall was under construction, it was determined that the name "HerpLab" was not desirable; it had connotations that were felt might confuse visitors (namely, the similarity of the word *herp* to *herpes*). Since the hall was designed to be a "permanently temporary exhibit," with a projected three- to five-year "life span," we didn't want to bestow it with the dignified name of Hall of Amphibians and Reptiles. We wanted a name that implied a fun and interactive atmosphere while not connoting any permanence. The name Lizard Lounge started being bandied around, and eventually (nearly) everyone accepted it. When the hall officially opened on June 26, 1996, that was its moniker.

Being essentially a temporary exhibit, we have the liberty of moving things around and testing new ideas, incorporating those that work while discarding those that don't. Thus, it is an ever-changing exhibit space and visitors can see something new every time they come. As we determine which exhibit ideas most convincingly tell the story we want to tell we can stockpile them for future inclusion in a permanent exhibit hall if our master plan, still under consideration, calls for it.

One feature of the Lizard Lounge that is unique to this museum's halls is a presentation area complete with a stage, a shelf full of various props, a video cabinet, a slide projector, and a "Mideo" (a close-up video camera attached to a monitor that allows visitors to see tiny objects). Gallery Presenters, selected from teens who have been in our Youth Programs for one or more years, are trained to give regularly scheduled programs throughout the day during the summer months as well as on weekends and holidays throughout the year. Obviously, these personal touches allow our visitors the opportunity to learn more firsthand as well as to ask questions; but it is the live animals themselves and the exhibits arranged throughout the room that illustrate basic biological concepts using reptiles and amphibians as examples.

Live Animals Teach Ecological Concepts
The predator-prey exhibits from the HerpLab were refurbished and included in the Lizard Lounge. The gopher snake/rodent board as well as another with a toad surrounded by insects clearly illustrates the predatory habits of these creatures, while the bird of prey overhead (now diminished to a falcon with a smaller rubber snake) indicates their role as prey. These displays demonstrate the value of this predation to humans in terms of pest control, a necessary point since many people want to know what these animals are "good for." The predator-prey relationship is simply explained because most people have at least an idea of the concept. From there it is easy to go on to food chains, food webs, and the "balance" needed for the health of an ecosystem.

Lizards are ideal subjects to demonstrate the concepts of territoriality and hierarchy. Our most common local lizard, the "western fence lizard," or "bluebelly," *(Sceloporus occidentalis)* is territorial by nature. Mature males will defend defined regions from other males while attracting females into it. Much bobbing, puffing up, and other aggressive behavior is engaged in during these activities. In a captive situation, however, behavior changes to conform to the restricted area. The confinement without escape possibilities leads them to become hierarchical rather than territorial. Thus, males will tolerate each other in close quarters as long as each knows "his place." Dominant males will each supplant the next lowest in the "pecking order" by climbing higher on the branches or rocks, displaying more, and mating more with any females.

Lizards, too, are part of an exhibit on how reptiles regulate their body heat through their physical surroundings and behavior. The "coast horned lizard," *Phrynosoma coronatum*, is especially useful for this, as it is easy to see how its broad, flat body can be turned in different directions to present a larger or smaller surface area to the sun for absorbing or deflecting heat. An activity using thermometers mounted on a cutout lizard shape allows visitors to take their "lizards" in and out of sun and shade and discover for themselves how an ectothermic animal can maintain a fairly constant body temperature.

Our local singers, the chorus frogs, illustrate such concepts as species sympatry, species and sex recognition, niche and resource allocation. The "Pacific chorus frog," *Pseudacris regilla*, and the "California chorus frog," *Pseudacris cadaverina*, often live in sympatric situations where the two may be found side by side in the same stream course, especially during late winter and spring. How do they avoid competition with each other, since both are about the same size and both consume insect prey? The California chorus frog inhabits a specialized niche—it lives only among boulders and large rocks within running streams. There it depends on cryptic coloration (another biological concept neatly introduced) to look like a lump on the rock while it takes advantage of aquatic insects and the myriad flying creatures that hover above the water's surface. The Pacific chorus frog has a much broader range of habitats and may be found at the water's edge but may just as easily be found some distance away in a moist area without free water. It is often found among grasses and low plants, where its rainbow of greens, browns, reds, bronzes and grays provides protective coloration and the stripe through its eye makes that feature less distinct.

The calls of frogs are each unique to the individual species, and presumably the female of each knows to whom she should listen in a mixed chorus. Thus, species recognition is an important aspect of calling. But mating ponds are frequently frenzied sites, with sex-hungry males eagerly grasping onto any object that moves into range. So each male frog has a "warning chirp" that lets an erring male know that he has grasped another male or perhaps even another species! The gentle "chirp-chirp-chirp" of a "western toad" *(Bufo boreas)* male, upon being picked up by his sides, is just such a sex-recognition call. In the Lizard Lounge, we will have (not installed as of the time of writing) digitally recorded calls of several western species, both mating calls and warning chirps as well as one scream of fright, that can be activated at the touch of a button while looking at a picture of the species concerned.

By the way, the call of the Pacific chorus frog (formerly called "Pacific tree frog") may be familiar to you even if you are not from the West Coast. It is the frog of Hollywood soundtrack stock, and any movie or commercial that shows frogs or toads, regardless of the species, may do so to the familiar "ribbet, ribbet" of southern California's most prominent anuran next to Kermit.

Snakes are good subjects for discussion of coloration. Our brightly colored "California mountain kingsnake," *Lampropeltis zonata*, has encircling bands of red, black, and white. This invariably brings up comparisons with the venomous coral snakes, even in California where none of the latter exist. The concept of mimicry can be discussed, although since coral snakes and California mountain kingsnakes do not occur in the same range, it is a stretch to consider mimicry a valid concept in this case. But how about disruptive coloration? The colors of the mountain kingsnake may stand out vividly in a terrarium, but on the forest floor with its carpet of dead leaves and the dappled pattern of sunlight and shade it virtually disappears. The regular black and white bands of the "common kingsnake," *Lampropeltis getula*, also serve this purpose in grassland or chaparral just as the stripes of a tiger disrupt, or break up, the outline of the animal in a bamboo forest. The eye stripe of the California chorus frog hides the round eye, a vulnerable body part as well as a giveaway to its location.

Coloration can also be explored in terms of concealment, color variations depending upon the locale of the individual specimen, why desert animals are generally lighter in color than forest animals, and so on.

Finally, reptiles and amphibians are ideal subjects for discussion of the concepts of evolution, natural selection, and speciation. In the West we have a particularly spectacular illustration in the Ensatina, *Ensatina eschscholtzii*, a salamander that appears to have originated in the Pacific Northwest and spread southward into California. The Central Valley appears to have split the southward-migrating populations into two columns. Those in the coastal ranges seem to have evolved plain-colored patterns while those in the Sierra Nevada and southern interior ranges are found in various spotted patterns. In San Diego County the two columns meet, and one can find a solid bright red colored individual living with a black-and-orange blotched specimen in the same area. Although considered subspecies of the same species, the two varieties do not appear to interbreed, and it is easy to see how continued isolation might have resulted in separate species evolving.

Conclusion

Theses are just a few ideas, of course. We have just opened the Lizard Lounge and thus just opened the possibilities for exhibits, activities, and programs that can be designed around themes such as the above. I'm sure that you can think of others, and I'd be happy to hear about them. As mentioned above, we want to keep the space active and dynamic so that visitors won't mind learning something because they're having fun doing so.

The point is that nearly every nature center, outdoor school, or environmental education facility has a small collection of reptiles and amphibians, or has the potential of creating one. Take advantage of the natural curiosity these creatures incur to bring people in and then use the animals to teach lessons that will result in a fuller understanding of ecosystems and the need for biodiversity. Hopefully, your visitors will not only learn to appreciate the amphibians and reptiles they share their neighborhood with but will go away with a better appreciation of the whole natural world.

INCORPORATING WILDLIFE RESEARCH INTO OUTDOOR EDUCATION PROGRAMS

Dave Guritz
Manager, Conservation Education
McGraw Wildlife Foundation
P.O. Box 9
Dundee, IL 60118

Tim Prange
Assistant Manager, Conservation Education
McGraw Wildlife Foundation
P.O. Box 9
Dundee, IL 60118

***ABSTRACT**: The Max McGraw Wildlife Foundation is involved in a number of research projects both onsite and within local communities. The education department incorporates methods and tools used by research biologists into programs, providing students with a unique learning experience.*

***KEYWORDS**: Fisheries, wildlife research, interpretation, habitat, activities.*

Introduction

The Max McGraw Wildlife Foundation was established in 1962 for the purpose of furthering management and conservation of wildlife and fisheries resources through programs of research, education, and cooperation with other agencies. Situated in northeastern Illinois, the Foundation's 1,224 acres include a variety of terrain, habitat types, and plant communities. Some 30 small lakes and ponds are scattered throughout the property. The diversity of habitat types and vegetation results in both a wide variety of animal life and an ideal setting for research and educational projects.

The research staff is engaged in a number of projects including studies involving waterfowl, raccoons and small mammals, wetland birds, fish stocking, and fish habitat preference studies. Research studies taking place both on and off the property allow for unique educational opportunities for students visiting the Foundation. Many of our education programs incorporate research methods, tools and facilities as part of the students' educational experience. Not only are students given a chance to use many of the these "tools of the trade," but they see how these tools are used in wildlife research and how this research aids in conservation efforts and a better understanding of the natural environment. The following activities are used in programs presented at McGraw. Activities are modified depending on ages of students.

Tube-a-Fish Activity and Craft

Fisheries biologists often study food selection of different species to determine foraging habits and abundance of prey items in a given habitat. One method of determining food habits relies on direct stomach content sampling using a wetted acrylic tube inserted into the fish stomach. The stomach can be checked visually for presence of food or, upon extraction of food items within the tube, stomach contents can be further analyzed (Van Den Avyle and Roussel 1980). This method is safe, fast, and leaves the fish unharmed.

Currently, program development has focused on using our own fish "tubing" system for wetland programs and fisheries tours. Students are asked if they can think of ways to tell what a fish has been eating without cutting open the fish. The tubing procedure is then explained. A number of fish representing different species are constructed out of felt or cardboard surrounding plastic soda bottles. These are used as the demonstration models. A large opening is cut into the plastic bottle to represent the mouth and stomach of the fish. The fish stomach is filled with cardboard backed pictures/cutouts or plastic models of various food items such as crayfish, dragonfly larva, and snails. The food models must be small enough to fit inside the tubes. The tubes are made of cardboard rolls of different sizes. Food models placed in the stomach vary by fish species represented and what questions you intend to ask the students.

Once the tube is inserted, students are asked to visually check the stomach and identify prey species. The fish is turned upside down to let the food slide out of the tube. Generalized food preferences of fish species and water quality assessment sheets are then handed out. Once the stomach has been emptied, the food items are surveyed and the students, depending on age, are asked several questions: (1) Based on the food items gathered, what type of fish do you suppose you have? (2) Is this fish an opportunistic feeder? Does it have a specific diet? (3) What time of the year is it? (4) Where does this fish live (pond, large lake, river, etc.)? (5) Is this fish a bottom feeder, top feeder or both? (6) What would you say about the water quality of the place where this fish lives? Food items are then returned to the fish. Students are asked to summarize their experiences, emphasizing the importance of habitat conservation for pollution-intolerant species.

Radio Collar Tracking

Radio telemetry is a tool used by wildlife biologists to collect information on wildlife without repeated disturbance to the animal. Radio tracking techniques are used when animal movement patterns and activity patterns limit the use of conventional methods such as direct observation or mark-recapture. It can be used to monitor movements, home ranges, habitat use and to detect individual moralities. With some modifications, sensor implants can measure vocalizations, respiration, body temperature, and a host of other metabolic functions (1994). The technique involves attaching a radio transmitter of a known frequency on an animal and using a receiving unit and directional antenna to track signal locations. Transmitters can be attached using collars, harnesses, adhesives, tail mounts (birds), and as implants (Bookhout 1994).

In the past, the Education Department has used telemetry as part of its Animal Tracks and Signs program. After students participate in conventional animal tracking activities, they are introduced to tracking using radio telemetry equipment. Three yogurt containers are placed at different locations in a room or outside. Only one of the yogurt containers contains a radio transmitter. The directional antenna is pointed in the direction of three containers. Students are asked which direction results in the strongest or loudest signal. The containers are opened and the radio transmitter shown. This familiarizes the students with the sound the receiver makes and how this sound varies in relation to proximity of the collar.

Students are led to a wooded area where a radio collar has been previously hidden. Instead of having three very visible choices, students must now consider an infinite number of well hidden possibilities. Each student is given a chance to handle the antenna to determine signal direction. After students have found the collar, they try to locate a radio collared raccoon (which is part of a study) on the property. After the activity, students are asked several questions: (1) What other animals could be tracked this way? (2) Why could determination of animal locations be important? (3) Do you think the animal would be found in the same location at night, or a different time of year? Concepts such as home range, territory, and habitat are also discussed.

The above activities could be presented effectively without the use of the equipment. Students could track a non-functioning transmitter using audible cues (varying whistle pitches) from an instructor to the same ends. A yardstick could easily substitute for an antennae.

Wetlands Mystery Birds Callback Activity

"Tape recordings of avian vocalizations have been employed in a variety of studies over the last two decades to elicit behavioral or vocal responses from birds. Playback recordings of bird sounds have been used in several ways, including (1) detection of secretive, elusive or nocturnal birds by scientists and bird watchers, (2) investigation of avian social behavior and territoriality, and (3) estimation of population size" (Ralph and Scott 1981). Biologists often use taped bird calls to illicit a response from birds or coax them out of hiding places. This technique can be used not only to determine if different species of birds are present, but it can also help pinpoint nest sites and assess habitat use by birds during breeding seasons.

The Wetlands Birds Callback Activity has been used in our Birds of Northeastern Illinois, and our Wetland Wonders programs. When used for the Wetlands program, a discussion of the historical range of wetlands in Illinois and reasons for wetlands destruction (over 90% in Illinois) introduces the concepts of habitat loss and endangered species. Students are asked how wetland loss might affect associated wildlife, including wetland birds. Students then play the role of ornithologists and are given the task of censusing a wetland area for birds using taped bird songs. First, a number of common bird calls are played so students become familiar with several species of birds and how calls are often written out in phrases or words to aid in identification. Each student is given a wetland bird card which includes a picture of the bird, species range, and phrase. Using a portable tape player, wetland bird songs are played to the students, who must translate their phrase and compare it to what is being played. If the taped bird song matches the phrase written on the cards handed to the students, they are asked to return the call. Later, the tape player is taken outside and used to illicit responses from some of the more common species.

Gizzard Grinders

This activity, although not based on any specific research technique, focuses on habitat and diet of the wild turkey, and the function of a bird's gizzard. The wild turkey is an upland game bird once on the decline due to market hunting and habitat destruction prior to modern conservation efforts. Conservation and restoration efforts have bolstered its population in areas where it was once extirpated, and today turkey populations exceed 3 million individuals (Dickson 1992). Wild turkeys are opportunists, consuming over 101 kinds of plant foods, and 35 animal foods (Dickson 1992). Because of this diversity in forage items, wild turkeys are found in a variety of habitats.

This two-part activity, which is used as part of our Turkey Talk program, begins by introducing the habitat(s) where turkeys live and what food sources are available to turkeys within those habitats. A turkey's diet depends upon what is available at certain times of the year. Certain food items will be found in certain habitats. For example, you don't expect to find corn in a cypress swamp or acorns in an open field. Two "habitat boxes" are placed at one end of the room; one representing a forest habitat, the other a field. The forest habitat box is filled with leaves, branches and food items that a turkey might find in the forest. The field habitat box is filled with grasses and food items that might be found there. Students are shown pictures of food items and decide which habitat(s) the items may be found. The students then strut and gobble over to the appropriate box to find that item. Once found, the food items are placed on a paper plate and the next turkey is allowed to go. Candy wrappers and soda can tops are also included as food items which are often found in the gizzards of turkeys.

Once food items have been gathered, students are shown acorns and walnuts, and asked how turkeys can possibly chew these items without teeth. The gizzard, a muscular organ with a raspy inner lining, takes the place of teeth and grinds up the food allowing digestive enzymes increased effectiveness over a larger surface area. All birds have gizzards and most birds' gizzards contain bits of small rocks (grit) to aid in this grinding. Turkey gizzards are extremely strong. It has been reported that turkey gizzards can completely crush 24 walnuts in the shell in under 4 hours (Proctor and Lynch 1993). Students are given the chance to see how these gizzards work. Each pair of students is handed a cloth bag (the gizzard) filled with small rocks. Next they place acorns or cereal into the bags. The bag is closed and students use their hands, which act as the muscles surrounding the gizzard, to grind up the food. They are given several minutes to grind their gizzards after which the bags are opened and their contents examined. While grinding the gizzards, be sure the bags stay closed and its contents are not tipped upside down.

The program ends with a visit to our Game Farm. There, students visit our wild turkeys and try to get the turkeys to gobble by gobbling themselves. Students also observe the unique body structures of turkeys, tracks left in the mud, and display behaviors.

Discussion

The use of wildlife research techniques can be adapted to both outdoor and classroom educational settings. Activities can be modified or created to address different topics, grade levels, or programs. Activities which employ research techniques teach students ecological concepts while utilizing tools used by research biologists.

References

Bookhout, Theodore A. 1994. *Research and Management Techniques for Wildlife and Habitats*, 5th ed. Bethesda, MD: The Wildlife Society.

Dickson, J.G. 1992. *The Wild Turkey: Biology and Management.* Harrisburg, PA: Stackpole Books.

Proctor, Nobel S., and Patrick J. Lynch. 1993. *Manual of Ornithology.* New Haven: Yale University Press.

Ralph, John C., and Michael Scott. 1981. *Estimating Numbers of Terrestrial Birds.* Lawrence, KS: The Cooper Ornithological Society.

Van Den Avyle, M.J., and J.E. Roussel. 1980. Evaluation of a simple method for removing food items from live black bass. *The Progressive Fish-Culturist* 42(4): 222–3.

LAKE ROOSEVELT FLOATING CLASSROOM: AN ENVIRONMENTAL EDUCATION PROGRAM AT LAKE ROOSEVELT NATIONAL RECREATION AREA

Bradford Frye
Education Technician
Lake Roosevelt National Recreation Area
Coulee Dam, WA 99116

ABSTRACT: *Lake Roosevelt's Floating Classroom brings area high school science students out into the field for hands-on water quality sampling, testing, and complex water quality issue application. The two-day course is supplemented by previsit lesson plans and postvisit community projects. The goal of the Floating Classroom program is to have students from rural, natural resource–oriented communities explore the means by which we can sustain water quality within a multiple use watershed.*

KEYWORDS: *Environmental education, rural communities, watershed, water quality.*

Background

Stretching for 150 miles from the Grand Coulee Dam to the U.S./Canadian border, Lake Roosevelt is the primary storage reservoir for the entire Columbia River System. Lake Roosevelt's watershed has complex environmental issues that cross state, tribal, and international boundaries. For example, area economies are largely resource based, with significant logging, mining, farming, and ranching along the length of the lake. Due to this rural resource-based economy, and the expanding recreational opportunities in the area, finding a challenging, objective environmental education program for area schools has been difficult. To meet the educational needs of area teachers, students, and communities, Lake Roosevelt was selected in 1994 as a pilot watershed education project by the Washington State Governor's Council on Environmental Education.

As part of this overall watershed education project, the National Park Service has created the Floating Classroom. High school students are now able to gain hands-on exposure to complex water quality sampling and testing procedures plus a more comprehensive understanding of conflicting watershed issues. The only way this program was successfully launched was with the active cooperation of the Governor's Council, the Lake Roosevelt Forum, Washington State Water Resources Center, the Colville Confederated and Spokane Tribes, and area schools. The Floating Classroom would never have stayed afloat if not for the reduced houseboat rentals from Roosevelt Recreation Enterprises.

Water Quality Issues

In the spring of 1995, eight schools and 150 students and teachers within the Lake Roosevelt watershed participated in the pilot venture for this program. Each science class involved spent two days and one night aboard laboratory-equipped houseboats. Day one is spent conducting basic water quality sampling and chemical testing of two predetermined sites up to twenty miles apart. The data from the pH, temperature, conductivity, dissolved oxygen, nitrate, nitrite, and phosphate tests are entered into an onboard computer. This data will be analyzed by future classes to detect variations and trends.

The second day begins with a discussion on data interpretation, its uses and limitations. Then, through role playing, we challenge the students and teachers to apply their data while investigating and attempting to resolve complex watershed issues. The Floating Classroom not only provides hands-on water quality monitoring but also exposes students and teachers to past, current, and future watershed problems.

In 1996 the Floating Classroom program expanded its curriculum to include one week of previsit instruction in basic water quality, limnology, and watershed education. Each student must pass a 20-question multiple-choice test before they can come aboard. A post-course community project was also added. By the end of the school year, each class was encouraged to share the information they learned from the Floating Classroom program with their immediate community through newspaper articles or presentations to school boards and Rotary Clubs.

Future Concerns

By 1997, the initial grants used to fund the Floating Classroom will run out. Therefore, each of the now 10 schools involved must raise all the money needed. This cost, including houseboat rental, gas, food, bus transportation and substitutes is estimated at roughly $800-$1,000 for

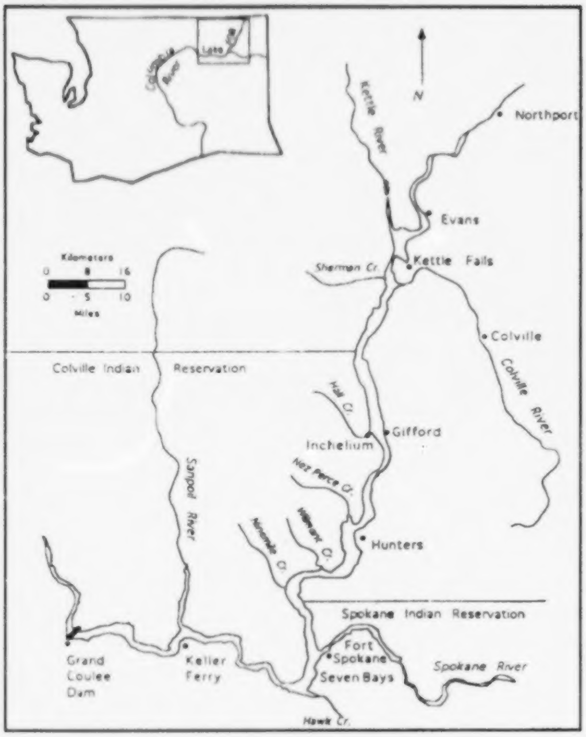

Lake Roosevelt
Columbia River
N
Kettle River
Northport
Evans
Sherman Cr.
Kettle Falls
Kilometers
0 8 16
0 5 10
Miles
Colville
Colville River
Colville Indian Reservation
Hall Cr.
Gifford
Inchelium
Nez Perce Cr.
Sanpoil River
Ninemile Cr.
Cr.
Hunters
Spokane Indian Reservation
Fort Spokane
Seven Bays
Spokane River
Grand Coulee Dam
Keller Ferry
Hawk Cr.

Figure 1. Map of Lake Roosevelt and tributaries.

each two-day class. Smaller schools have chosen to combine and share costs. Larger schools have a difficult time just narrowing the interested students down to 20, the maximum number for each class. Despite the cost, all schools are committed to continuing their involvement in the Floating Classroom program. Some schools will simply budget the money. Other schools will seek community support. This funding scramble is not all bad. If a certain business or community service organization can help fund the school's participation, then the program itself is reaching beyond the schools and into the general public.

The successful growth of the program will also require the hiring of an environmental education intern to supplement National Park Service staff. This intern will be responsible for some onboard teaching, pre-class preparations and post-class community reports. The Floating Classroom program also hopes to facilitate speaker symposiums involving agency experts and citizen advocates. These symposiums will not only give students a further understanding of complex watershed issue, but also bring often adversarial points of view together in the name of education.

The usual problems are encountered with this kind of environmental education program. Besides funding constraints and insurance concerns, the Floating Classroom is limited to the spring because of the small summer interpretive staff at Lake Roosevelt National Recreation Area. If staff could work on the Floating Classroom in September, expanding it into the northern part of Lake Roosevelt, where some unique international water quality issues are found might be possible. This would also enable more schools to participate. For the time being, however, the focus is on refining what we have already established.

Conclusion

Agencies, schools, and communities have embraced the Floating Classroom. Its initial success, must not tempt us into either complacency or defensiveness. For this exciting program to last, we must continually solicit teacher and community involvement. The communities that surround Lake Roosevelt are rural-resource based, conservative, and naturally suspicious of federal environmental education programs. Any effort to encourage resource stewardship in this area of the country must present all points of view in a fair, unbiased manner. The Floating Classroom is successful in large part because it has embraced this philosophy. Of course, it doesn't hurt to have a houseboat as your classroom.

BEST COPY AVAILABLE

MAKE A MEMORY—
CREATING EFFECTIVE SCHOOL FIELD TRIPS

Robert Keys
Director/Naturalist
Asbury Woods Nature Center
Millcreek Township School District
4105 Asbury Road
Erie, PA 16506

ABSTRACT: *Educational programs for schools are an important part of a park or nature center's goals, but how those programs are developed and presented to the educators and students can have a large impact on how well students retain what they have been taught. A field trip just for the sake of having a field trip will not be as effective as a field trip tied directly into the learning of the classroom.*

KEYWORDS: *Environmental education, field trips, programming.*

Importance of Field Trips in Environmental Education

For thousands of years, people have learned about the environment by leaving their familiar surroundings and venturing forth into the natural areas close to their homes. Even the Bible mentions one of the kings of the Israeli kingdom being a teacher of the plants and animals found in the kingdom (I Kings 4:33-34). Today educators are finding that the outdoors is an important part of the environmental education curriculum. Field trips are an essential part of teaching ecological principles to students (Hale 1986; Monroe 1984) and should be used with other teaching strategies.

In their study on teaching strategies, Wise and Oakley (1983) suggest that non-traditional learning environments for teaching and learning are more effective than traditional ones. Dewey (1938) espoused the view that students should develop their concepts of inquiry by urging teachers to get their students out of the classroom and into the community to learn first-hand, just like children are inclined to do naturally. In the field of environmental education, research seems to bear this study out. William Sharp, the "father of outdoor education" stated, "That which can be best learned inside the classroom should be learned there, and that which can best be learned in the out-of-doors through direct experiences should there be learned" (*Outdoor Education for American Youth*, p. 2). It seems for environmental education to be effective, educators must leave the confines of the classroom and venture into the field. Leaving the classroom and participating in field activities can help clarify what educators have been teaching, however, they must realize that there is a lack of "textbook" examples in the outdoors (McKenzie et. al 1986). In referencing the importance of environmental education, Vivian (1973) notes:

> Environmental education is a unique venture. It seems inescapable that schools must reach out to participate in present day society's environmental decisions. This implies that students will frequently leave the classroom to study various environments first-hand, the school and community will learn to communicate with each other about environmental problems and decisions, and the school and community will interact by planning for the improvement of environmental quality. Students who are well-informed about ecological relationships in general and local environmental conditions in particular and who are disposed to take social action through available means and agencies represent the epitome of environmental education.

For years, researchers have studied the various components of field trips, their effectiveness and written materials to be used in this "outdoor classroom." As Lisowski and Disinger (1991) state at the beginning of their study, "A particular feature of environmental learning is its close identification with outside-the-classroom phenomena." If this use of the outdoors as a classroom is so important, what factors need to be considered an essential part of the field trip experience to make it successful, and why is it not used by teachers if it can be a significant aid in the learning process?

Community-based nature centers and natural areas can help the student better understand environmental concepts and link them with their community. This direct experience with the environment will not only help the student understand ecological relationships, but can be accomplished at minimal cost to the school. This ecological perspective is best stated by Leff (1978):

> Environmental education should aim to increase not only environmental knowledge and awareness but also ecological systems thinking, ecological consciousness, and other aspects of a pro-life system, and the motivation and ability to take action for effectively accomplishing those aims should include making use of the whole community in helping students relate environmental studies to actual local environmental, political and social issues; and involving students and teachers in action projects that include striving for pro-life changes both in the school and in the broader community.

Field trips into the community generally fall in the one-half to one day range. This length of trip not only exposes students to various aspects of their community, but is also the most effective of the field trip options (Schwaab 1982). Part of this effectiveness can be directly related to the first-hand experiences students encounter. The replacement of classroom lecture with direct experience was seen as an important fundamental of teaching as early as 1950. Collings (1950) recognized not only the importance of direct experience, but the link of that experience to the community:

> School curricula are most effective when they are closely related to the communities they serve. Boys and girls learn best when they are dealing with direct experience. Isolation from direct experience is a real danger facing our schools. Talking about things is increasingly taking the place of real experience with things.

Thus, the field trip to the local nature center may be the best for students if an educational experience is the goal of the educator. A survey conducted by Schwaab (1982) summed up the feelings of educators the best. When asked what they considered to be the most effective field trip format, most found field trips around the locale (away from the school site) to be best. This result could in part be due to the moderate degree of novelty experienced by students participating in the field trip (Falk 1983).

The Impact of Previsit Learning

Though field trips are an important part of implementing an effective environmental education strategy, the result of these field trips can in part be influenced by activities taking place in the classroom prior to the field experience. The preparation of students conducted in the classroom prior to the field trip can significantly enhance the learning potential of the field trip. In studies conducted by Howie (1974) and Lewis (1982) to determine the best methodologies for teaching natural science materials, it was determined that a combination of indoor preparation followed by outdoor study is the most effective. In an examination of students attending field trips at museums, Gennaro (1981) concluded that previsit activities can significantly enhance a field trip experience. Lisowski and Disninger (1991) also concluded that "prior knowledge is a significant predictor of post-test scores." Hence, the suggestion that prepared students will gain more from a field trip than those who are unprepared.

Regrettably, many teachers either do not understand or value the benefit of preparing their students prior to a field trip. In fact, a study by Gottfried (1980) showed that sixty-two percent of the teachers participating considered field trips as an extracurricular "change of pace" to the normal classroom activity. Many field sites operated by professional interpretive staffs offer educators packets of previsit materials to use in the preparation of their students for the upcoming field trip. Unfortunately many times (as experienced by the staff at our site) these materials go unused by the educators and students arrive having no background in the materials the educator has asked the professional staff to present.

The lack of preparation for a field trip experience even when the activities are available to the educator may be linked to the fact that many educators feel they are being pressed to add more to their already full curriculum. Research tends to bear this out. Ham and Sewing (1988) surveyed educators concerning barriers inhibiting them from conducting a more thorough environmental education program. They concluded that the greatest hindrance to teaching environmental education is a lack of time in the school day, followed by a lack of preparation time. If educators at outdoor facilities ask classroom educators to add more to what they are already doing, they may be headed for failure. Another factor is that many educators feel they do not possess the skills necessary to prepare their students (Yockers 1979) and many feel it is not even their responsibility to teach environmental education to their students (Simmons 1988).

Yet the importance of previsit learning is best summed up in the statement of Howie (1974):

> If conceptualization is a desired objective of environmental education, the students need extensive and structured programs of advanced organization. This finding is contrary to the spontaneous discovery method used in the outdoor-only phase of this program, an approach that is supposed to ultimately produce conceptualization.

Creating Effective Solutions

Creating an effective field trip requires more than just a knowledge of your site and its themes; it requires a knowledge of the students and the educators attending your programs. A field trip program designed around the school and its curriculum will be more effective in teaching concepts to students than a stand alone field trip program.

When a field trip is designed around the school's curriculum, it places less pressure on the educator to take time out of the busy schedule to teach your pre- and postvisit materials. Instead, your pre- and postvisit materials become an integral part of the unit being taught at the school. Using this method, students come to your site better prepared to learn the concepts you wish them to learn on the trip. It also has the alternative effect of creating programs which will be more popular and used by the schools within your area. Field trips which are directly related to the curriculum of the school are more fundable by school boards seeking to eliminate "extras" from their tight budgets.

An effective program starts with an understanding of the school system with which you are working. Knowing the state standards for science is fine, but understanding the individual school is better. How the school implements the state standards should drive your program. Ask the school to send you a copy of their curriculum guide or learner outcomes for each grade level. Start with these and ask yourself where your sites theme fits into this format. You may have to do this for every school system you work with until you find the common ground you are seeking.

After you find the common ground on which to begin building your programs, ask the school if you can borrow copies of its text books or teacher books for the subject on which you are focusing. Look through the textbooks to find out what vocabulary is being used, how are the concepts taught, and does this fit what you originally planned for your program.

With the information you have gathered, you are almost ready to begin your program development. However, finding out when teachers teach the units you are focusing your programs on is also important. It would not do well to develop a program for the fall only to find out the teachers won't be teaching that unit until the spring. Being the first chapter of the textbook does not necessarily mean it will be the first unit taught in the fall.

With all of your information gathered, you are ready to begin writing. Seeking educator help in the writing of your unit will make it all the better. Educators know what does and does not work in the classroom. An idea which works well at your site may not work well in a traditional classroom setting. Involving classroom educators from your participating schools in the writing of your pre- and postvisit activities will make them stronger and will give ownership of those units to the schools and more likelihood of use by the visiting educators.

Creating programs for your site around your theme and the curriculum of the school also has long lasting effects. In a study conducted at our site (Keys 1995) with programs developed using this method, we discovered that students participating in a program with no prior knowledge of the material did just as well as the students who were prepared when tested the week after the program. However, when the same students were retested two months after the program, the students who had been prepared had retained their understanding of the concepts, while those who had not been prepared dropped off significantly from their first test scores.

References Cited

American Association for Health, Physical Education, and Recreation. 1975. *Outdoor Education for American Youth.* Washington, D.C.: AAHPER.

Barker, Keith, ed. 1985. *NIV Study Bible.* Grand Rapids, MI: Zondervan Publishing House, I Kings 4:33-34.

Collings, M. 1950. Exploring your community: A direct experience study. *Journal of Education Research* 44:225-229.

Dewey, J. 1938. *Experience and Education.* New York, NY: MacMillan Company.

Falk, John. 1983. Field trips: A look at environmental effects on learning. *Journal of Biological Education* 17(2):137-142.

Gennaro, E.D. 1981. The effectiveness of using pre-visit instructional materials on learning from a museum field trip experience. *Journal of Research in Science Teaching* 18: 275-79.

Gottfried, J. 1980. Do children learn on school field trips? *Curator* 23(3):165–174.

Hale, Monica. 1986. Approaches to ecology teaching: the educational potential of the local environment. *Journal of Biological Education* 20(3):179-184.

Ham, Sam H. and Daphne R. Sewing. 1988. Barriers to environmental education. *Journal of Environmental Education* 19(2):17-24.

Howie, Thomas R. 1974. Indoor or outdoor environmental education. *Journal of Environmental Education* 6(2):32-36.

Keys, Robert. 1995. The effectiveness of pre-visit modules on the retention of knowledge in field trip experiences. Master's Thesis, Gannon University, Erie, PA.

Leff, H.L. 1978. *Experience, Environment and Human Potentials.* New York, NY: Oxford University Press.

Lewis, Gerald E. 1982. A review of classroom methodologies for environmental education. *Journal of Environmental Education* 13(2):12-15.

Lisowski, Marilyn, and John F. Disinger. 1991. The effect of field-based instruction on student understanding of ecological concepts. *Journal of Environmental Education.* 23(1):19-23.

Monroe, Martha. 1984. *Bridging the Gap Between the Natural and the Built Environments with Nature Center Programs.* Columbus, OH: ERIC Center for Science, Mathematics and Environmental Education, Ohio State University.

Schwaab, Karl E. 1982. Instructional methods: their use and effectiveness in environmental education. *Journal of Environmental Education* 14(2):8-12.

Simmons, Deborah A. 1988. The teacher's perspective of the resident environmental education experience. *Journal of Environmental Education* 19(2):35-42.

Vivian, V.E. 1973. *Sourcebook for Environmental Education.* St. Louis, Missouri: C.V. Mosby Company.

Yockers, Dennis Harold. 1979. *Selected Michigan Public School Teachers' Perceptions About Factors Influencing Utilization of Outdoor Sites and Resources for Outdoor/Environmental Education.* Ph.D. Dissertation, Michigan State University.

THE NATIONAL ENVIRONMENTAL EDUCATION STANDARDS PROJECT

Bora Simmons
Associate Professor
Northern Illinois University
Outdoor Teacher Education
P.O. Box 299
Oregon, IL 61061

ABSTRACT: *What should an environmentally literate individual know and be able to do? This paper describes the development of a set of voluntary national standards for environmental education.*

KEYWORDS: *Environmental education, educational standards.*

Learning for Life

A knowledgeable, skilled, and active citizenry is key to resolving the environmental issues that promise to become increasingly important into the next century. While our schools play a major role, cultivating environmental literacy is a task that neither begins nor ends with formal education. Many parts of our society shape attitudes toward and knowledge about the environment—family, peers, church, community, interest groups, government, the media, and so on.

Environmental education often begins close to home, encouraging learners to forge connections with and understand their immediate surroundings. The awareness, knowledge, and skills needed for these local connections and understandings provide a base for moving out into larger systems, broader issues, and a more sophisticated comprehension of causes, connections, and consequences.

Environmental education fosters skills and habits that people can use throughout their lives to understand and act on environmental issues. It emphasizes critical and creative thinking skills along with other higher level thinking processes that are key to identifying, investigating, and analyzing issues, and formulating and evaluating alternative solutions. Environmental education builds the capacity of learners to work individually as well as cooperatively to improve environmental conditions.

What Are the National Environmental Education Standards?

Environmental education is a lifelong process with roots firmly planted in the education of school-age children. Across the nation, however, the content and quality of the environmental education provided to students varies widely. This inconsistency is due, in part, to the fact that there are no agreed-upon guidelines for environmental education. The work of practitioners and theoreticians has created much common ground about what makes for good environmental education; but nowhere is this practical wisdom recorded in a way that provides focus and direction for the field.

The National Environmental Education Standards Project attempts to describe the core ingredients for quality environmental education, based on commonly accepted ideas about what an environmentally literate citizen should know and be able to do. It aims to provide students, parents, educators, administrators, school board members, and the public a set of common guidelines for environmental education.

The North American Association for Environmental Education (NAAEE) is taking the lead in establishing guidelines for the development of coherent, cogent, and comprehensive environmental education programs. These guidelines will also point the way toward using environmental education as a means for meeting the standards set by the traditional disciplines and providing students with opportunities for synthesizing knowledge and experience across disciplines. The environmental education guidelines will draw from the traditional core disciplines, e.g., science, civics, social studies, mathematics, geography, language arts.

In no way are these guidelines meant to take the place of the standards set by these disciplines or to add another layer of complexity. Instead, the guidelines will, when completed, help educators develop meaningful environmental education programs that integrate across and build upon the disciplines.

These will be voluntary guidelines. They will not define a national curriculum nor will they prescribe how environmental education will be taught at the state and local level. Educators, community members, and parents will continue to develop locally appropriate curricula, using the guidelines as a basis for monitoring the quality of children's education.

How Will the Standards Be Developed?

In an effort to assure that the standards reflect a widely shared understanding of environmental education, they are being developed by a "writing team" composed of environmental education professionals from a variety of backgrounds and organizational affiliations. This team is taking on the challenge of turning ideas about quality into usable guidelines. In addition, drafts of these guidelines are being circulated widely to practitioners and scholars in the field (e.g., teachers, educational administrators, environmental scientists, curriculum developers, and others). Their comments will be incorporated into successive revisions of the document.

The learner guidelines as drafted encompass six broad topic areas that describe what a student graduating from high school should know and be able to do:

Affective dimension. From its very beginnings, environmental education has embraced the role played by the affective domain in a learner's education. Learning is not just acquiring information—feelings, experiences, and attitudes affect how learners remember and process information. Furthermore, environmental issues are not strictly scientific in nature, and recognizing the feelings, values, attitudes, and perceptions at the heart of environmental issues is an essential step in understanding them, and a precursor to accepting responsibility for exploring, analyzing, and resolving them.

Knowledge of natural processes and systems. Another building block in the foundation of environmental literacy is an understanding of the processes and systems that constitute the environment. Learners also must be able to apply these concepts to problems and issues.

Learners should have a working knowledge of key understandings in the physical sciences, life sciences, and earth sciences that enables them to comprehend the biological, chemical, and physical dimensions of the environment and how they work together in natural systems.

Knowledge of human processes and systems. In addition to scientific learnings, environmental literacy depends on an understanding of societies, cultures, and individual and group behavior. It is important to understand the influence of these human processes and systems on the environment.

Investigation and analysis. Environmentally educated people are able to investigate and analyze environmental problems and issues using a variety of techniques. Environmentally literate citizens are familiar with a range of issues, are able to apply their ecological and sociopolitical knowledge to understand environmental issues and their cause, are able to investigate issues using a variety of sources of information, understand the nature of bias, know and can use basic science and math skills, and are able to identify the implications of specific environmental issues for ecological and human processes and systems. Also, they can identify the influence of political, educational, economic, religious, and governmental institutions on issues.

Sense of personal responsibility. Environmentally educated citizens go beyond concept-based learnings and beyond investigation and analysis to develop an understanding that what individuals and groups do can make a difference. They are motivated and empowered to act on their own conclusions about what should be done to resolve environmental problems.

Skills for resolving issues. Environmental education incorporates the development of skills for resolving environmental issues. Environmentally educated people can identify, define, and evaluate an issue on the basis of evidence and different perspectives. They are able to consider the implications of possible solutions and arrive at their *own* conclusions about what should be done. Ultimately, environmentally literate citizens understand the ideals, principles, and practices of citizenship in our democratic republic. They possess skills necessary for citizenship.

This paper is adapted from the review draft of Environmental Education Guidelines for Excellence: What School-Age Learners Should Know and Be Able to Do. *July 1996. Washington, D.C.: North American Association for Environmental Education.*

THE NEED FOR NATIVES

Mike Dunn
Coordinator of Teacher Education
North Carolina State Museum of Natural Sciences
P.O. Box 29555
Raleigh, NC 27626
e-mail: mdunn@nando.net

***ABSTRACT**: Educators and public land managers are encouraged to use native plant species in their landscaping and as a focus for educational programming. Highlights include resources for more information and activity suggestions that can help people learn to appreciate the beauty and value of "going native."*

***KEYWORDS**: Native plants, attracting wildlife, UTOTES, museum programs, teacher education, natural landscaping.*

The Need for Natives

Native plants—what are they? Where do I buy them? Aren't they messy? They are not really as pretty, are they?...These are just some of the questions you may hear when you start promoting the use of native plants in landscaping. One of the first obstacles you will encounter is in defining the term *native plant*. In the broadest sense, native plants are species that occur and reproduce in an area without human cultivation. This, unfortunately, would include many invasive introductions such as kudzu and Japanese honeysuckle. A more restrictive definition would be that *a native plant is one that grows naturally within a region and was found in that area prior to European settlement.*

For practical purposes, most people define native species as those that grow in an area without human cultivation exclusive of aggressive introduced species which have become naturalized. In our programming, we concentrate on native plant species that provide important habitat for wildlife. This use of native plants is to not only help reconnect our landscaping to the natural habitats surrounding us but also to reap the many benefits of closer contact with wildlife. Living things are powerful motivators for learning among children (and adults). But why bother to search out native plants when you could plant a beautiful flowering ornamental or an inexpensive, "well-behaved" specimen?

Sara Stein (1993), in her personal gardening journal, *Noah's Garden*, makes an eloquent call for changing our attitudes and our relationship with the landscape. The book traces her evolution from a more traditional gardener on her own small tract of land in New England to a gardener with a love for natives. As she altered and controlled the landscape with introduced species and manicured maintenance practices, she began to notice a decrease in the wild creatures that she enjoyed observing, indeed creatures whose presence was one of the primary reasons for acquiring the property. Her quest led to a new personal gardening ethic emphasizing the use of native plants. She came to the realization that there is a need to view the landscape as a whole, to plant with a concern not only for our aesthetic and maintenance needs, but to landscape within the context of your local environment—to help restore the interrelationships of the plants and animals that make our ecosystems function.

With increasing urbanization, we are rapidly losing habitats for many species of plants and animals. Planting native species is about helping to maintain the diversity of our surroundings for the benefit of their wild inhabitants and for the enrichment of our lives.

Here are several reasons for planting native species:

- Local wildlife is generally better adapted to using native plants, so efforts to attract wildlife may prove more successful.
- Teaching children about local plants helps give them a sense of ownership to their local environment. Once they begin to know and appreciate wildflowers and native trees and shrubs, they are more likely to care about preserving them.
- Native plants are adapted to local conditions and generally require less maintenance. They are also more likely to be resistant to local pest populations.
- Native plants provide teachers with a wealth of teaching tools from natural history information to folklore and cultural uses (edible and medicinal properties, etc.). It is also generally easier to locate resource information about native species.
- The planting of native species is ecologically important and serves as a model of habitat conservation for students.

The use of native plants is especially important for educators—schools, museums, parks, and other areas dedicated to helping people learn about and appreciate their environment. Planting native species is one way of greatly enhancing your environment as a learning habitat. More importantly, there is the responsibility we all have to educate young people about their world. A forester who often makes classroom visits to teach children about the value of trees lamented that many students know more about dinosaurs or the tropical rainforest than they do about the oak trees found on their school grounds. Educators and those who manage public landscapes have a great opportunity to educate the public about the values of native plantings.

Where Can You Find Native Plants?

Until recently, native species were generally more difficult to find than ornamentals at your local nursery. Thankfully, this is changing. There are many nurseries now specializing in the propagation of native plants and even your local neighborhood nursery is likely to stock several native species. If you are having difficulty locating native species at nurseries in your area, one of the best resources for this and other information on native plants is your state botanical garden, arboreta or native plant society. An excellent starting point is to search on the World Wide Web under the heading "native plant societies." Other sources of information include state and local museums of natural history, nature centers, state and federal parks and refuges, wildlife and forestry agencies, agricultural extension agents, soil and water conservation offices, and certain garden clubs.

One of the best national resources for information on native plants is the National Wildflower Research Center in Austin, Texas. The center publishes a variety of resources aimed at helping you locate native seeds or plants, care and maintenance of native plant gardens, and educational programming using native species.

An excellent way to obtain many native species is to grow them yourself. This is especially valuable as an educational lesson for students. There are a few excellent publications available that deal with propagating and growing native plants and these are listed in the accompanying bibliography. We recommend either planting of seeds or taking cuttings (stem or root) as the simplest methods for propagating most species. Always leave behind adequate seeds to ensure a future supply. Remember, wildflowers and grasses may be ready to plant within a few weeks or months after propagation, but growing shrubs and trees to planting size from either of these methods takes time, generally one to three years. For young people, planting seeds can be educational, fun, and is an inexpensive way to begin large numbers of plants. Remember to plant seeds when nature "plants" them (when the seeds ripen). In taking cuttings, you may need to treat them with rooting hormones available at most garden centers. Source areas for cuttings and seed collection (with landowners' permission) include roadsides, drainage ditch banks, and powerline rights-of-way.

Another strategy for obtaining plants for your landscape is through so-called plant rescues. This refers to going into areas that are about to be disturbed due to construction activities for homes, businesses, roads or other reasons and removing desirable plants. This strategy provides opportunities to salvage plants for use in the landscape while also preserving some individual specimens of native plants that would otherwise be destroyed. It is an excellent way to quickly obtain plants of usable size at no cost to you other than some muscle-power. There is often a higher mortality of seedlings associated with transplanting from the wild than is typical from nursery-bought or container-grown specimens. Because of this and for conservation reasons, *you should not dig plants from the wild for your landscape except in cases where you know that the area in which the plant is growing is about to be destroyed (and then only with the landowner's permission).*

A few recommendations for conducting successful plant rescues in your local area include:

- Organize some volunteers to help with the rescue (parents and students, garden club members, scouts, etc.).
- Find out about potential rescue sites in your area (contact local developers, grading companies, businesses, etc.).
- Get written permission from the landowner (or person in charge) to scout and later remove plants from the site.
- If at all possible, plan your rescue for fall, winter, or early spring.
- Scout the site before digging the plants. It may be useful to ask for help from a local resource person familiar with identifying native plants of your area.
- Prepare the site where the plants will be transplanted to before doing the rescue.
- Prune back woody material prior to transplanting.
- Keep your rescued plants well watered in their new home until their roots have a chance to recover from the shock of being moved.
- Thank the landowners for their permission and assistance.

Don't forget to provide some hands-on instruction for the actual planting process. Some of the best intentions fall short when the plant meets the ground.

Native Plants—A National Perspective

North American ecosystems are home to an estimated 20,000 native plant species. Scientists are increasingly concerned at the rate of loss of native species. According to some estimates, more than 200 plants have become extinct in the United States in the last 200 years and nearly 5,000 native species are at risk. Recognizing the need to enhance education and preservation efforts towards native species, several agencies came together to create the national Native Plant Conservation Initiative (NPCI) in 1994. The NPCI provides a framework and strategy for linking resources and expertise in developing a coordinated national approach to plant conservation. President Clinton signed a Federal Native Plant Conservation Memorandum of Understanding in spring 1995 which helped set the stage for this cooperative effort. Recent accomplishments of NPCI members include:

- Building partnerships—currently the Initiative includes 9 federal agencies and 53 non-federal cooperators.

- Strategic planning—a national strategic plan for NPCI was developed in May 1995. Specific working groups are focusing on: outreach and partner recruitment, evaluation of exotic plants, native plant land restoration, habitat conservation, and information sharing.

- Conservation projects —in November 1994, the National Fish and Wildlife Foundation awarded a $250,000 challenge grant to fund native plant conservation projects. Twelve projects around the country were funded in 1995; over 120 projects were submitted for consideration this year.

- Outreach and public education—since 1994, various federal agencies have cooperated to promote a "Celebrating Wildflowers" program of public education activities. Accomplishments include a calendar and educational brochure, a traveling display and video and a Wildflower Hotline (1-800-354-4595) which highlights weekly events on the Nation's public lands which celebrate wildflowers. A World Wide Web home page on NPCI is under development.

A State's Perspective—North Carolina

Due to its geographic location and diverse topography, North Carolina ranks tenth in the nation in the number of vascular plant species. North Carolina's efforts at native plant conservation offers an example of what states are doing to preserve their native plant diversity. Programs such as the Natural Heritage Program, the N.C. Botanical Garden, the N.C. Plant Conservation Program, various public land management agencies and a host of private conservation groups (N.C. Wildflower Preservation Society, N.C. Nature Conservancy, etc.) work to document species distributions and develop management strategies and educational programs for native plant conservation. Each summer, a strong regional educational experience is held at the Landscaping with Native Plants Conference held at Western Carolina University in Cullowhee, North Carolina. Similar regional conferences are now being held in other parts of the United States.

Our agency, the N.C. State Museum of Natural Sciences, offers a variety of public and school programs that focus on native plants. Planning for a new facility (to be opened in 1999) includes a strong effort to interpret the fascinating stories of native plants to the public. One of our most far-reaching programs is a teacher education program called Using The Outdoors to Teach Experiential Science (UTOTES). This program is currently funded for three years by the National Science Foundation. At the end of this three-year cycle, UTOTES will have reached over 2,000 educators across the state and helped them to feel more comfortable using their school grounds to learn about local plants and animals. This is one of a growing number of programs that focus on school grounds naturalization. An excellent resource on this subject for educators is the Evergreen Foundation, a Canadian organization featuring a school grounds naturalization newsletter and great on-line resources (contact 416-596-1495 or www.evergreen.ca). Another excellent resource is the National Wildlife Federation's School Yard Habitats program. Information on this and their highly successful Backyard Wildlife habitat certification program will soon be available on-line.

Teaching About Native Plants

Our focus in the UTOTES program is to help educators become better acquainted with the natural world on their school grounds, become comfortable with taking their students outdoors and to look for strategies to enhance their grounds as a place for wildlife and learning. For reasons stated earlier, the use of native plants to help attract wildlife is stressed. Many people are simply unaware of what native plants are found in their area. Our activities stress observation skills and hands-on techniques including field identifications, role-playing (e.g., pollination strategies), and the interrelationships of plants and animals.

A sample of observations made on an unknown plant include:

- List five observations about your plant (leaf shape, texture, living things on your plant, etc.).

- Invent a name for your plant based on your observations.

- Sketch your plant.

- Use field guides and/or other resources to find out the following information about your plant: common name; scientific name; value to wildlife and/or humans; other interesting facts.

- Compare your plant to the other teams' plants. How are they similar? How are they different?

This strategy guides the participant to use their observation skills to really look at the plant rather than simply flipping through a picture book until they find something (or get frustrated trying) that looks similar. We continue to develop supplemental fact sheets and other materials (the booklet *Plant It and They Will Come*) that are "teacher friendly" for our regional native plants. Other educational strategies include:

- Schools are given a selection of mostly native species which attract wildlife such as birds and butterflies.

- Wildflower seed give-aways (including planting instructions and fun-facts).

- Use of freeze-dried plants for programming during non-flowering months.

- Facilitating the creation of student-made field guides to the flora and fauna of a particular school grounds.

- Creation of demonstration school grounds gardens in different regions of the state.

- Developing a regional guide to alternative plantings (instead of crape myrtle, plant wax myrtle, etc.)

The UTOTES initiative focuses on relatively small-scale enhancement projects near the school building (butterfly-shaped butterfly gardens, water gardens, etc.). The next step is to develop strategies, including regional demonstration areas, of school grounds native plantings on a larger scale. It is a long process to help people realize the values of native plantings, but the payoff, especially on school grounds and other public landscapes, is worth it.

Useful References

Dunn, Michael L., and Sidney H. Shearin. 1994. *Plant It and They Will Come.* Raleigh, N.C.: N.C. Dept. of Environment, Health and Natural Resources.

Phillips, Harry R. 1985. *Growing and Propagating Wild Flowers.* Chapel Hill: The University of North Carolina Press.

Stein, Sara. 1993. *Noah's Garden: Restoring the Ecology of Our Own Back Yards.* Boston: Houghton Mifflin Company.

Wilson, Jim. 1992. *Landscaping with Wildflowers: An Environmental Approach to Gardening.* Boston: Houghton Mifflin Company.

Wilson, Jim, and Guy Sternberg. 1995. *Landscaping with Native Trees.* Shelburne, Vermont: Chapters Publishing Ltd.

PLANNING FOR SUCCESSFUL TEACHER WORKSHOPS

Elsie Sellars Hardenbrook
Bureau of Land Management
Red Rock Canyon National Conservation Area
HCR 33, Box 5500
Las Vegas, NV 89124

ABSTRACT: *Training volunteers to conduct teacher workshops when staff is not available to lead field trips can increase the comfort level of teachers taking students on the trail. Facilitator training, handbook development and teacher involvement in planning helped ensure successful workshops.*

KEYWORDS: *Training, volunteers, teachers, workshops, field trips.*

Introduction

Red Rock Canyon National Conservation Area (RRC), administered by the Bureau of Land Management (BLM), is located in the Mohave Desert just 10 miles from Las Vegas, Nevada, the fastest-growing city in the United States. The area has been and continues to be in high demand for field trips in the fall and especially the spring.

The popularity of the area for field trips in the eighth largest school district in the United States has required the BLM to take reservations. Previsit packets are sent that include a confirmation form, information sheet, map, copy of the Children's Discovery Trail booklet, student check list, video tape showing a field trip to the area and activity ideas. The previsit packets, however, were not enough information for teachers and certainly no substitute for a ranger-led field trip. Newly recruited teachers to the area have a difficult time finding information on the Mohave Desert in one location.

The BLM, wishing to continue offering educational field trips to RRC, met with members of Friends of Red Rock Canyon who included elementary school teachers and educators from Nevada Cooperative Extension to form a committee to devise a plan. Volunteers would be recruited and trained to conduct workshops for teachers bringing classes out on field trips.

The Planning Process

The first thing the committee did was write a mission statement. In this case, they stated, "Rock Canyon National Conservation Area is a highly diverse, yet very fragile ecosystem within the Mohave Desert. Workshops and in-service programs will enrich the environmental education experience for both teachers and students and bring about an awareness and appreciation of the unique biodiversity of Red Rock Canyon. With such an awareness and appreciation, teachers and students can make informed decisions in their day-to-day actions and efforts which will affect generations to come." This was key in keeping the committee focused and was referred to frequently during the planning process.

The committee then decided to put its energy into planning and conducting workshops for teachers who bring classes out on field trips. Before jumping into designing a workshop, the committee sent survey forms to every elementary school teacher in the Las Vegas area to determine if teachers would be interested in paying for a noncredit workshop to learn more about the Mohave Desert and bringing a class to Red Rock Canyon. After receiving a positive response, efforts were put inyo writing a handbook for teachers specifically about RRC with topics that covered geology, cultural history, plants, animals, and corresponding activities including previsit, postvisit and rainy-day activities. The handbook supplemented an existing general guide written for teachers on the Mohave Desert.

The committee then began planning a facilitator training workshop for volunteers to conduct the "Explore the Great Outdoors" workshops for teachers.

The Facilitator Training Workshop

A core of individuals from the committee planned the two-day facilitator training workshop. The first eight-hour day of the workshop covered: the role of a facilitator; how adults learn; cognitive styles; the teacher workshop format and content; presentation skills; and facilitating versus interpreting on the trail. Day two of the workshop had volunteers in training sitting in on an actual "Explore the Great Outdoors" workshop for teachers presented by the core members of the committee.

The Teacher Workshop

Fliers advertising the teacher workshops were distributed to every elementary school teacher in the Las Vegas area. The workshops were also advertised in the school district newsletter. Teachers registered for the workshop session of their choice and were sent a confirmation letter and information regarding goals, expected outcomes, agenda, and a map.

The teacher workshop included introduction, opening, expectations, guided tour of materials and resources, gathering of information on RRC using the jigsaw puzzle technique, hiking the trail, and workshop evaluations.

Perhaps the most challenging part of the workshop for both participants and facilitators was the trail portion. The teachers wanted a guided tour, but it was important that facilitation rather than interpretation occurred for teachers to help them feel comfortable bringing a class on the trail. We wanted teachers to answer the questions in the trail booklet from the knowledge they gained earlier in the workshop as well as from their personal experiences. The facilitators guided their discussions and would provide accurate information whenever necessary. We knew we had done our job when teachers commented: "Now I understand. I feel comfortable bringing my class out here." Rather than, "She was a good tour guide."

Evaluation and Follow-Up

After each season of workshops, the committee evaluated the workshops from input provided by the facilitators. The original teacher workshops were expanded from four to five hours and finally to six hours. This time frame has worked best for information gathering and time on the trail.

A refresher facilitator training is offered before each season of workshops. New volunteer facilitators are paired with an experienced facilitator for a mentoring relationship. The new volunteers sit in on a teacher workshop before facilitating one.

The RRC handbook is in the process of being rewritten now that it has been used for three seasons. The background information will be used for a handbook being developed for the next project—middle schools.

Conclusion

Natural areas continue to be in high demand for field trips. When staff-led field trips are not possible, volunteers teaching teachers is a viable alternative. It is important to develop a mission statement that reflects the goals of the group or workshop and refer to that statement throughout the planning process to stay focused. A key to a successful workshop is inviting members of your target audience to sit in on the planning process. Their input is invaluable and they can provide you with information on what the target audience wants from a workshop.

THE RELATIONSHIP BETWEEN ENVIRONMENTAL INTERPRETATION AND ENVIRONMENTAL EDUCATION

Doug Knapp, Ph.D.
Assistant Professor
Department of Recreation and Park Administration
Indiana University
Bloomington, IN 47405

ABSTRACT: *There are two important distinctions between environmental interpretation and environmental education: inherent differences in structure/characteristics and lack of foundational goals for interpretation. Both variables are discussed with an emphasis on evaluating successful partnerships between both fields.*

KEYWORDS: *Environmental interpretation, environmental education, research, partnerships.*

Introduction

The fields of environmental interpretation and environmental education have similar terminal goals—to produce a citizenry that can make responsible environmental decisions and actions (Hungerford and Volk 1990; Knapp 1995). Both fields have a great deal in common as suggested by a variety of leaders in each profession (Comish 1995; Hammitt 1981; McCutcheon, Bielenberg, and Gross 1993; Mullins 1984; Sharpe 1982).

Although the ultimate aim of environmental interpretation and environmental education may be similar, the inherent nature of both fields create two clear contrasts. First, the structure/characteristics of both professions are different. Environmental education tends to be associated with formal institutions that require students to participate in a sequential learning process. Interpretation, on the other hand, tends to be voluntary and located in recreational settings. Most interpretive experiences, at best, cover a period of 2 hours to half a day. As Gail Vander Stoep explains, "Typically [interpretation] occurs in settings that are informal or nonformal; target audiences are voluntary; the interpretive experience is usually short term (single, stand-alone experiences) rather than part of a series over an extended period" (1995, p. 470). On the other hand, curriculum development in environmental education is based on the premise that a student becomes invested in environmental issues (Hungerford and Volk 1990). This variable is predicated on a period longer than the average interpretive experience can offer.

The lack of time with constituents creates a significant gap in attaining the behavior change goal associated with both environmental interpretation and education. Several studies regarding environmental behavior list important variables associated with this desired change. Two of the most crucial variables are an individual's in-depth knowledge of environmental issues and an investment of time regarding these issues (Borden and Powell 1983; Hines, Hungerford, and Tomera 1987; Holt 1988; Hungerford and Volk 1990; Marcinkowski 1989; Sia, Hungerford, and Tomera 1986). People need *time* to attain the sensitivity, knowledge, and attitudes necessary for a positive environmental ethic. Time certainly is one characteristic that an interpretive experience lacks.

The second important contrast with environmental education is interpretation's lack of credible program development goals associated with behavior change. For the past 20 years, the field of environmental education has followed a set of established principles. These guideposts (the Tbilisi Doctrine) were produced at an international environmental conference in 1977 and consisted of a series of hierarchical learning objectives. The Tbilisi Principles have been the foundation for the development of several theoretical models in environmental education. These directives have laid the groundwork for research and development in theoretical and action-based models that have produced several reputable environmental curricula (Disinger 1993).

Environmental interpretation, on the other hand, is based on six principles written by *one man* (Freeman Tilden) forty years ago. Although his principles are important directives, the field has not developed a "road map" to achieve some of his attitudinal/behavior change goals. The interpretive field has offered only a handful of untested theoretical models to base methodology. In 1986 Cable, Knudson, and Theobold suggested the use of Fishbein's Model of Reasoned Action to aid interpretive experiences in "attitude changes and action modification" (p. 21). Other leaders have utilized theories based on Kohlberg, Maslow, and Piaget to develop interpretive experiences for children. The author has also developed a behavior change model based on research in the environmental education field (Knapp 1994). These and other paradigms must be tested to help the field of interpretation in its behavior change objectives.

Interpretation Is an Aspect of Environmental Education

The inherent structural differences between the two fields and lack of research-based program development goals for interpretation support the notion that an interpretive experience should be considered an *aspect* of environmental education and not environmental education itself. Interpretation does not achieve the ultimate goal of environmental education. Despite our best efforts, a two-hour interpretive experience does not accomplish behavior change in an individual regarding his/her actions toward the environment. On the other hand, an interpretive experience can be an essential, successful aid in achieving this behavior change goal.

During the past three years, the Department of Recreation and Park Administration at Indiana University has implemented several studies regarding the short-term impact of an interpretive experience on elementary and middle school students' environmental knowledge, attitude, and/or behavior. The quantitative findings have shown no significant impact on students' intent to behave differently after an interpretive experience. On the other hand, significant results have been found in aiding students' knowledge of concepts related to the resource site following their experience (Drake and Knapp 1994; Knapp and Barrie 1995).

Though many in the field may not find these results surprising, there are those from the past and present who believe that, somehow, these short-term experiences could change behavior (Bixler 1991; Mullins 1984; National Park Service 1992; Risk 1992; Sharpe 1982; Tilden 1957). Statements such as below characterize this lofty aspiration:

> Interpretation must not only fulfill the aspirations of conservationists but also should act as a major force for the social, economic, political, and cultural good. Interpretation should encourage and motivate individuals and groups to participate in decisions concerning alternative futures and appeal to people at an affective as well as a cognitive level (Ballantyne and Uzzell 1993).

This type of rhetoric regarding the hopeful outcomes of an interpretive experience can be detrimental to the actual constructive influences our profession can accomplish. This is not to say that interpreters must not heed Tilden's call to provoke, but they should be pragmatic in their quest and understand that the most successful tactic to achieve behavior change may lie in the establishment of partnerships with the longer term process of environmental education.

What "Fit" Works Best?

These differences are not discussed to put one field above another. Rather, it is to support the notion that if interpreters want to impact constituents beyond initial awareness they must understand that connections with formal environmental education will be critical to promote the ownership variables needed for behavior change. An interpretive experience must be considered an important aid in achieving the ultimate goal of environmental behavior change. But this experience is not representative of all aspects of environmental education and must not be considered as such.

Research must continue and expand in order to learn how an interpretive experience can best fit in the scheme of environmental education. If an interpreter only has two hours with a visitor, what key environmental variables should be addressed? Should these programs be general awareness-based, issue-oriented, or a combination of both? The initial research conducted at Indiana University seems to support the notion that an interpretive experience's best "bang for its buck" revolves around the promotion of ecological knowledge and not changing attitude or behavior.

Unfortunately, studies evaluating the impact of an interpretive experience on environmental behavior is sporadic. Bixler (1991), following a review of research in interpretive programming, summarizes an important conclusion: "Unfortunately, research in this area seems to be declining, and there are few researchers systematically analyzing the instructional settings and methods employed by interpreters" (p. 33).

One reason for the lack of practical research is the difficulty in evaluating interpretive experiences with regards to long term attitude/behavior change. Many factors come into play which makes it difficult to isolate interpretation's effect on individuals. Despite this challenge a trend in the future must be to study long-term impacts of an interpretive program. Both qualitative and quantitative methods must be explored to aid the field in knowing what really can be accomplished in an interpretive experience.

Conclusion

For the past twenty years, the field of environmental education has been establishing itself as an accountable educational process committed to producing environmentally literate citizens. Although charged with the same mission, environmental interpretation has continued to offer an array of programs/experiences based loosely on one man's ideas.

Therefore, a challenge for the profession of environmental interpretation is to learn what it *can* accomplish in regards to the variables of environmental behavior change. This knowledge must then be used to fit into the environmental education process through dynamic partnerships. These cooperative projects will ultimately achieve the attitude/behavior change goals that both fields desire.

References

Ballantyne, R., and D. Uzzell. 1993. Environmental mediation and hot interpretation: A case study of district six, Cape Town. *Jour. of Environmental Education* 24(3): 4-7.

Bixler, R.D. 1991. Successes and failures: A review of research on outdoor field trips. In: *Proceedings: 1991 National Interpreters Workshop*, 27-34.

Borden, R., and P. Powell. 1983. Androgyny and environmental orientation: Individual differences in concern and commitment. In: *Current Issues in Environmental Education and Environmental Studies Vol. VIII*, ed. by A. Sacks et al., 261-275. Columbus, OH: ERIC/SMEAC.

Cable, T., D.M. Knudson, and W.F. Theobald. 1986. The application of the theory of reasoned action to the evaluation of interpretation. *Journal of Interpretation* 11(1):11-25.

Comish, T.R. 1995. Environmental success stories: The role of interpretation. *Legacy: Journal of the National Association for Interpretation*. Sep/Oct: 2-4.

Disinger, J.F. 1993. Environment in the K-12 curriculum. In: *Environmental Education: Teacher Resource Handbook*. Millwood, NY: Kraus.

Drake, T., and D.H. Knapp. 1994. The Hilltop Interpretation Project. *The Interpretive Sourcebook* (Proceedings of the 1994 National Interpreters' Workshop). Madison, WI: Omnipress, 282-92.

Hammitt, W.E. 1981. A theoretical foundation for Tilden's interpretive principles. *Journal of Interpretation* 12(3): 13-17.

Hines [Stone], J.M., H.R. Hungerford, and A. Tomera. 1987. Analysis and synthesis of research on responsible environmental behavior: A meta-analysis. *Journal of Environmental Education* 18(2):1-8.

Holt, J.G. 1988. A study of the effects of issue investigation and action training on characteristics associated with environmental behavior in non-gifted eighth grade students. Unpublished research paper, Southern Illinois University.

Hungerford, H.R., and T.L. Volk. 1990. Changing learner behavior through environmental education. *Journal of Environmental Education* 21(3):8-21.

Knapp, D.H. 1994. *Validating a Framework of Goals for Program Development in Environmental Interpretation*. Doctoral Diss., Southern Illinois University, Carbondale.

Knapp, D.H. 1995. Moving beyond Tilden, producing behavior change goals for environmental interpretation. *Legacy: Journal of the National Association for Interpretation*, Jan/Feb: 24-27.

Knapp, D.H., and E. Barrie. 1995. Should we interpret issues or ecology? *The Interpretive Sourcebook* (Proceedings of the 1995 National Interpreters' Workshop). Madison, WI: Omnipress, 330-345.

Marcinkowski, T.J. 1989. An analysis of correlates and predictors of responsible environmental behavior. Doctoral dissertation, Southern Illinois University at Carbondale, 1988. *Dissertation Abstracts International* 49(12):3677-A.

McCutcheon, N., W. Bielenberg, and M. Gross. 1993. Bringing schools to the parks: A case study from the midwest region. In: *Proceedings: 1993 National Interpreters' Workshop*, 227-29.

Mullins, G.W. 1984. The changing role of the interpreter. *Journal of Environmental Education* 15(4):1-5.

National Park Service. 1992. *National Parks for the 21st Century: The Vail Agenda*. Washington, D.C.: NPS.

Risk, P.H. 1992. Interpretation and intangibles. *Legacy: Journal of the National Association for Interpretation*, 3(5):6-7.

Sharpe, G. 1982. *Interpreting the Environment*. New York: Wiley & Sons.

Sia, A.P., H.R. Hungerford, and A.N. Tomera. 1986. Selected predictors of responsible environmental behavior: An analysis. *Journal of Environmental Ed.* 17(2):31-40.

Tbilisi Intergovernmental Conference on Environmental Education. 1978. *Toward an Action Plan: A Report on the Tbilisi Conference on Environmental Education*. A paper developed by the FICE Subcommittee on Environmental Education. Washington, D.C.: U.S. GPO, Stock No. 017-080-01838-1.

Tilden, F. 1957. *Interpreting Our Heritage*. Chapel Hill: University of North Carolina.

Vander Stoep, G.A. 1995. Trends in interpretation. In: *Proceedings of the Fourth International Outdoor Recreation & Tourism Trends Symposium*. St. Paul: University of Minnesota. 467-72.

A SENSE OF PLACE FOR ENVIRONMENTAL EDUCATION AND INTERPRETATION

Jeanie Hilten, Youth Program Director
Great Smoky Mountains Institute at Tremont
9275 Tremont Road
Townsend, TN 37882

Richard F. Hilten, Director
Companion Adventures, Inc.
P.O. Box 386
Walland, TN 37886

ABSTRACT: *Effective interpretation is based upon the interpreter's own understanding of a "sense of place" for his or her special charge. This awareness has its three dimensional foundation in time, culture, and ecosystems, producing a story whose "reading" will entertain, educate, and enrich program participants, inspiring their appreciation and preservation of the site.*

KEYWORDS: *Sense of place, special qualities, orientation, geography, ecology, cultural history, essence.*

Why Is a "Sense of Place" Important for Staff, Visitors, and the Park Itself?

The unique aspects of a site—the geography, ecosystems, and cultural history—challenge us to convey to program participants and park visitors that most fundamental of messages: "where we are." Without a clear view of each of these special qualities, site staff and volunteers cannot fully convey how and why the place is valuable, different, worth experiencing, and worth protecting. Development of a strong sense of place guides us to become better naturalists, historians, educators, and interpreters through a solid understanding of and personal identification with the park and its environs. This basic skill of interpretation can be encouraged, taught, and refined by a variety of exercises and activities.

In a day when so much of our landscape is becoming homogenized with an "Anywhere, USA" type of architecture, six-lane highways, and franchise stores, it is worthwhile for park staff to be able to effectively orient visitors and lead them to the unique aspects of their site, as a first step in showing them why the place deserves appreciation and preservation. Those staff and volunteers who truly have a feel for where they are can communicate this focus to visitors with confidence and enthusiasm.

What Are the Elements of a Sense of Place?

A sense of place involves many senses—a sense of direction, a sense of orientation in space and time, a sense of community (cultural and natural), and the finely tuned five senses. (Not to mention common sense, horse sense, people sense, nonsense, and sense of humor!) In addition, the process of cultivating the sense of place requires construction of a framework of knowledge about elements that combine to create the essential attributes of the site—geography, ecosystems, and cultural history.

Close your eyes and imagine that you are in a personal favorite place at your site. What images spring to mind? How clear are they? Picture the landscape in front of you. What are the sights, sounds, and smells? Turn slowly 360 degrees. Describe to yourself in detail what is present. Are there any blind spots in your memory?

Now float up into the air for a bird's-eye view. Can you see the map of the land to the north, south, east, and west, with the trails, buildings, roads, valleys, mountains, rivers and shorelines? Do you notice any more blind spots?

Next, come down to earth and travel back in time from your spot—100; 500; 1,000 10,000 years. Do you know what the vegetation looks like? How are the people dressed, where do they live and what do they eat? Take note of the images that are clear as well as the ones that are fuzzy. Zoom back into the present because you are now ready to embark upon a quest for a more complete understanding of the essence of your park or historic site—one that will broaden and deepen your sense of place.

How Can Staff Build a Full Personal Understanding of the Ecological, Historical, and Cultural "Address" of the Site?

As naturalists, we try to keep our senses sharp and to practice the observation skills needed for interpretation to others. Knowing where we are in space and time is a prerequisite for really being in touch with and aware of our total surroundings. This "dimensional positioning" via triangulation of time/culture/ecosystems can be clearly focused. If staff work at improving abilities in this area, they become more than warm bodies at a visitor center, instructors in front of a line of students, or guides on a "canned" tour of popular scenic spots. They become personally oriented to the entire web of events, processes, and features of the park and its surroundings. They and their programs are relevant. Such skills allow staff to be a part of the region—mentally, physically, and emotionally.

What Methods Are Useful in Cultivating This Awareness?

There are several activities and exercises that serve as a springboard to the sense of place. These are worthwhile to test the level of awareness and also to see any weak spots. Following are a sampling of methods to try with staff and volunteers—to give some guidance when you tell them to "get to know your park." From the threads of knowledge spun by the staff can be woven a fabric of experience for visitors and participants, giving them a true sensation of knowing where they are: in a place like no other.

"Compass." Indoors, outdoors, in a familiar place, or out in the "boonies," announce that on the count of three, you will ask everyone to perform a simple task. "One, two, three. Point due north." After chuckling together at the different opinions expressed by the waving arms, find north and discuss how people orient themselves and what we mean by a sense of direction. Is it helpful to cultivate it? Why and how? Some folks are much better than others. Is it magnetite in the brain, just paying close attention, or both? What can you do to improve your knowledge of what landscape features are N, S, E, and W in and around your site?

"Map it." Assemble several different kinds and scales of maps with your park on them—world, relief, road, local, vegetation, geology, etc. Have everyone locate where you are on each map and put the maps on the wall or floor, properly oriented N/S in order from the most local maps to the world map (large scale to small scale). Spend a few minutes looking at the maps to see what is of interest around and at the site. Note the features described in the map legend. Then make a list of things for people to find on any of the maps. For example, the distance from your park to _______ city; the highest point within a 50-mile radius; trace the full course of a river; at what latitude is your site and what countries are at the same latitude around the world; what geologic layers are directly under the visitor center; which scenic backroads lead from the interstate to the site; etc.!

"Questions from visitors." Have each person write five questions that a first-time visitor to your site would be likely to ask (other than "Where is the bathroom?"). Exchange questions with each other and answer them fully, especially when it comes to giving clear directions, tracing events that took place, or discussing natural history. Everyone strive to give as rich and as personal answers as possible—not only what you have read about, but what you have seen and done yourself. Analyze the gaps in your answers and find out how to fill them. Would the answers given satisfy you if you were the visitor?

"Draw it out." Divide the group into teams of two. Have one person draw a map for the other person showing "the best way" to get to a certain place nearby. Don't elaborate on what "the best way" is, but say that it is open to interpretation by the map drawer. The person reading and following the map should do exactly as it says, whether or not he or she knows how to get to the destination. Discuss the different maps drawn and how they guided people to experience the area in different ways. Note any difficulties in drawing the maps and the reasons for the problems.

"How do I get there?" Without looking at a map, have staff give directions to the park from points to the N, S, E, and W. Then go to a good map and see where your visitor wound up!

"Picture this." Select slides from familiar places around the park, from areas adjacent to the park, from locations within a day's drive of the site, and finally from places several days away. Show the slides and ask staff to write where each was taken, one thing they know about the place, if they have been there personally, and name a distinctive sound or smell from the location. Emphasize the importance—and fun!—of exploring. Knowing a wider region than one's own backyard puts that back yard into perspective and gives a base of comparison.

"The liar's club." Select objects or artifacts that relate to your site in some way but are perhaps rather obscure in their function or significance. Have three staff leave the room with one object. They will decide on one person who will tell the truth about what it is, and the other two will lie. Upon returning to the room, and hearing the stories, the rest of the staff votes on what the thing really is. Talk about some of the unique specimens—cultural, ecological, and geological—to be found at your site and how they relate to its history.

"Set the scene." A sense of place involves the human element. Who lived at the site? What kind of culture did or do they have and how can that culture be represented accurately in programs? Choose a variety of clothing, furniture, utensils, tools and other things that may or may not best represent the site at a particular period of time. Ask the staff to assemble them, including wearing the clothes, to show a scene that might have really existed at the park during the time period chosen. Let staff eliminate the items that are "out of context" and stress the importance of being as true as possible with portrayal of the cultural aspects of the site.

"Eagle-eye trail." Along a path, place in various locations ten natural objects that could be found in your park and ten natural objects that definitely would not be found there. Ask staff to walk slowly along the path, observe and count to themselves how many things they see and whether or not they are really a part of the park ecosystem. The object of the trail is twofold: to be observant and find all the items as well as to separate the ones that belong from those that don't. When everyone is finished, walk the trail together and discuss how the various pieces symbolize the unique attributes of the area. (Note: this can be done with historical objects, too.)

How Might a Framework of Research Be Constructed to Assemble the Specific Facts and Knowledge for the Sense of Place?

To build a framework of knowledge about the park, staff can keep research notebooks and files. Geography, ecology, and cultural history are three foundation elements that support the sense of place. In combination, they give each site its own distinctive natural/cultural "fingerprint." These notebooks can be added to over the years and updated with new facts and issues.

Geography—the distinctive physical, social, political setting of the site:

- Include maps to show physical location (local, state, United States, world).
- Note nearby parks, museums, other points of interest.
- Be familiar with surrounding communities: rural, urban, small towns and their social and economic components.
- Know major cities within 50, 100, 200 miles.
- List state and local capitals, county seats, and other governmental districts.
- Assemble maps of all kinds: relief, topographic maps showing mountains, rivers, lakes, caves, canyons, etc.; vegetation maps, soil, and geologic maps.
- Acquire reports from a variety of surveys concerning all the natural resources of the site.
- Keep track of weather data and climatic information.

Ecology—interrelationships of physical and biological aspects:

- Notes from walks, lectures, talks with experts in the fields of botany, geology, zoology, forestry, etc.
- Field notes from personal exploration of every nook and cranny, near and far, and how each relates to the park "whole."
- Scientific reports, studies, readings from naturalist journals.
- Books and specific field guides.

Cultural history—the human influence past and present:

- Interviews with long-time residents.
- Archeological/anthropological reports.
- Historic routes (trails, waterways).
- Settlement patterns.
- Specific site histories.
- Old photos.
- Newspapers, local library and county records.
- Environmental issues today that affect the site, including scientific opinions and local sentiment.

Conclusion: What Role Can the "Sense of Place" Play in the Broader Picture of How Humans Relate to Our Environment?

If we lose touch with where we are, then who we are becomes less important, less well defined. This is a symptom of increasing societal numbness to our surroundings, including our mother earth and brother creatures—plant and animal. We may begin to think all good things to eat come from a grocery chain; or we may not think at all about it. We lose touch with our world—our little spaceship—if we don't know where we are and something about how we fit into the scheme of things. As educators, interpreters, and naturalists, when we convey the love of our home planet through our personal knowledge of one special corner of it, our efforts become significant, distinctive, and relevant to the bigger picture of environmental stewardship.

A SIMPLE ASSESSMENT

Patricia McGlashan
Educational Consultant
20 Ridge Road
Stony Creek, CT 06405

Sil Pembleton
Director of Environmental Education
Hard Bargain Farm Environmental Center
Alice Ferguson Foundation
2001 Bryan Point Road
Accokkek, MD 20607

ABSTRACT: *Hard Bargain Farm needed to assess the hands-on environmental program, show the value of the program to potential funding sources, and provide feedback to staff. We surveyed fifth-graders from eight schools. They gave brief responses on Post-it notes, stuck them on a "Graffiti Board," and grouped them by category.*

KEYWORDS: *Informal assessment, environmental education.*

Strengthening Your Program Through Assessment
Program assessment has become one of our priorities. The naturalists teaching the courses have felt the need for direct and immediate feedback from students before they left the farm. The naturalists' needs were twofold—they wanted some gauge of what content material students had absorbed and also of what impact the program had on those difficult areas to measure: attitudes and behavior change.

Administrators needed to show the value of the programs to potential funding sources. They wanted to be able to point to gains in content knowledge as well as changes in attitudes and behaviors resulting from children's experiences at the environmental education center.

Criteria: Quick and Easy Assessment
As with most parks, Hard Bargain Farm is an informal educational setting, and we wanted an assessment tool that was in keeping with the spirit of the program. It needed to be quick and easy to administer, and non-threatening for the children. We wanted it to measure gains in information and changes in attitude, and give an indication at least of intentions to change behavior. And finally, it had to be inexpensive.

The Assessment Tool: A Graffiti Board
With these criteria in mind, we developed a simple Graffiti Board assessment tool, and in 1995 began administering it to groups of fifth graders. At two different times during their one-and-a-half day stay, students are asked to contribute to the Graffiti Board by responding in writing on Post-it notes to four scripted questions. They are also encouraged to add spontaneous responses at their leisure.

At the end of the first day, the naturalist assembles students in front of a large copy of the schedule of the past day's activities and reads the following script:

1. *In a few minutes, I am going to ask you some questions. But first, let's review what you did today.*

This is a copy of your schedule for today. Look at all the different things you did:

- *You visited the barnyard, met the animals that live there, and helped with farm chores. Think about what you saw and did. You may close your eyes if it helps you to concentrate.* (Give students a wait time of at least 11 seconds.)

- *You also took dipnets and buckets and hiked through the watershed. Think about what you saw and did.* (Give students another wait time of at least 11 seconds.)

2. The naturalist gives each student a pencil and two Post-it notes and asks them to mark a "B" for boy or "G" for girl in the upper righthand corner of each note. Then the naturalist asks students to answer two questions:

Question 1: *What did you do today that you never thought you would do?* (Wait while they answer.)

If you wrote more than one answer, that's fine, but now please go back and put a circle around your most important answer.

Question 2: *Write down one new thing that you learned today.* (Wait.)

3. As students complete their answers, they come up and post their responses on the Graffiti Board. Then the naturalist leads a discussion of the answers, and students classify their answers into similar categories.

4. Just before students leave on the second day, the naturalist gathers the children together again for another assessment session and reads the following:

Look at this schedule of your activities for the past two days. Now close your eyes and think about everything you saw and did here at Hard Bargain Farm: the farm tour, the watershed walk, the haywagon ride, milking the cow, the tool museum, the problem solving course, and "Who Polluted the Potomac" activity. (Wait at least 11 seconds.)

5. The naturalist distributes two Post-it notes and a pencil and using the same procedure as before asks students the following questions:

Question 3: *Complete this sentence: The thing I will always remember about this trip is.....*

Question 4: *What will you do differently because of what you learned here?*

6. Students again post their answers on the Graffiti Board, discuss them, and sort them into affinity groups.

What We Found

In analyzing responses to Question 1, it was surprising to learn that so many students (29%) either had not experienced or did not anticipate contact with bodies of water. They were enthusiastic about the size and beauty of the Potomac River, and also about their excursions into streams and marshlands wearing big boots. As expected, opportunities to touch, feed, and observe bodily functions of the farm animals made a very large impression (20% of responses). Wild animals, such as birds, amphibians, fish, and tadpoles were also mentioned often (17% of responses).

In Question 2, most reported learning centered around animals, both domestic (44%) and wild (22%). Students recorded new information about what animals eat, their economic value, their size and texture, their habitats, and their habits. We need to take a closer look at responses to determine their quality.

In Question 3, there is no doubt that the intimate experience with our milking cow made a profound impression on students (33%). And, as also reflected in the next question, the problem solving course (27.8%) was an important experience in what team work can do. We have considered moving this activity to the first day so that students can put into practice the lessons they learned here.

Finally, we learned through Question 4 that students take away with them a strong commitment to preserve the natural environment. They also began to realize that preservation takes a team effort: we all helped create the problems, and we all must work together to solve them.

Our purpose in designing this last question was to assess students' intent to act in an environmentally responsible manner as a result of their short but intense experience here. Fully 51% of the students said they intended to modify their behavior in ways that would benefit the environment. They mentioned a wide variety of doable, beneficial behaviors such as turning off electrical appliances when not in use, riding bikes, picking up litter, and recycling. Another 14% learned that they couldn't do it alone, but that team work is the answer.

Students attitudes toward animals changed, too. Many expressed a surprising new appreciation for their usefulness, their value, and their needs, and vowed to get more personally involved with their welfare (10%). A scant 2.4% either didn't respond to the question or said they did not intend to change anything as a result of these experiences.

Using the Results

The results of our simple assessment both confirmed some of what we already knew and helped us to rethink some of the elements of our educational program. We already knew, for instance, that animals play a pivotal role in getting our message across, and that milking the cow is a memorable experience. We just didn't know how memorable it really was. So it was useful to tabulate the actual numbers and get a perspective.

We also knew that two of our second-day programs, "Who Polluted the Potomac?" and the problem-solving course, were solid, effective activities. We were pleased with how strongly they seemed to influence students' attitudes. We are now considering moving these two programs to the first day to take better advantage of them.

In "Who Polluted the Potomac?", student awareness of the complex nature of pollution is heightened. They could put this new awareness to work throughout the remainder of their stay and take immediate actions to reinforce what they learned. The seeds of cooperative behaviors and attitudes are sewn in the problem solving course, and these too should be given the chance to grow while the students are still with us. Perhaps then there will be more carryover after they leave us to go back into the real world.

WE ARE ON THE AIR!: HOW TO TAKE A VISION AND DEVELOP A MARKETABLE PRODUCT

Wendy Zohrer, Env. Ed. Coordinator
Polk County Conservation Board
Jester Park
Granger, IA 50109
e-mail: WZor@aol.com

Julie Barrows, Account Executive
WHO TV13
1801 Grand Ave.
Des Moines, IA 50309

***ABSTRACT**: Natural resource professionals can successfully use television to increase environmental awareness and action, promote outdoor recreational opportunities, increase visibility, and create a positive agency image. Through careful planning and implementation, television can be an excellent informational and educational tool to reach audiences not being reached by other interpretive efforts.*

***KEYWORDS**: Television, visual communications, partnerships, fund raising, environmental education.*

Introduction

The Environmental Education Unit of the Polk County Conservation Board (PCCB) has played an active role in the production of weekly one- to two-minute environmental segments. These vignettes, a broadcast industry term for segment, have a specific placement on the network and are not randomly placed as typical public service announcements. Creative fund-raising efforts and partnering provided the money for the first two years of television production and air time. Program evaluation results have provided necessary information to continue utilizing television as an important component of the informational and educational efforts of the conservation board.

Iowans average 6 hours per day in television viewing time which is slightly less than the national average of 9.2 hours (Rodriguez, Farnall, Geske, and Peterson 1996). Television utilizes sight, sound, color, motion and emotion to grab and keep the attention of the viewer.

Natural resource professionals can successfully use television to increase environmental awareness and action, promote outdoor recreational opportunities, and create a positive agency image as well as increase visibility.

Television provides a captive audience which includes people that are not being reached by other methods of marketing or hands-on interpretive efforts. The steps to success include: identification of a specific target audience, review of the demographics of the TV networks, evaluation of placement within program line-up, development of a marketing proposal and speculative spot for fund raising, search for partnerships, production of the broadcast segments for targeted audience, and evaluation of the entire project.

Target Audience Identification and Placement Evaluation

Most people think TV production and the purchase of air time is very expensive and only large businesses with a big budget can afford it. This is not true. The cost is based on supply and demand and the number of people watching.

First the target audience must be selected, then each network should be evaluated to find the niche appropriate for the segments and/or series. Scarborough research corporation publishes information comparisons of the TV networks. General information is provided such as age, income, and type of employment. Information is even available on viewers' recreational interests such as camping, fishing, hiking and horseback riding. For our viewing area, the ABC, CBS, NBC, and FOX affiliates were easily compared to one another.

Kids between the ages of eight and twelve were identified as the primary target audience for the first weekly series called "Planet Patrol Adventures." Each one-minute environmental vignette is aired four times per week during prime viewing time for this target audience. KDSM FOX 17 was selected because it has the highest profile in children's programming in central Iowa. It reaches over 75% of the state's population.

WHO TV13 was selected for "EARTHCenter 13," an adult two-minute environmental news segment. NBC is the only network which has virtually done away with animation on Saturday morning. Most NBC affiliates across the United States air the "Saturday Today Show" followed by a local newscast. The informal style and format of the local newscast presented the ideal placement for a segment like "EARTHCenter 13." The newscast airs from 9 to 11 a.m., reaching families at home on Saturday morning making plans for their weekend activities. "EARTHCenter 13" was placed in the first half hour which had the highest number of viewers.

NBC was also selected because all of the Iowa affiliates have organized into the Iowa News Network. A local version is produced along with a statewide version called "EARTHCenter News" which is sent to the Iowa News Network via satellite.

Marketing Proposal Development

A written proposal is needed to present the project to potential partners to secure funding. The proposal will vary depending on who is being approached. In general, it should include the situation analysis, project goal and objectives, the outline of benefits to the partner, each partner's responsibilities, credibility statement of team members, and viewer coverage map along with TV network information.

Another key element is to include a speculative spot. A speculative spot shows a potential partner the quality of production, content, and placement of partner's logo.

Partnerships

No money was allocated for television broadcast production and air time for the first two years. Only staff time and other inkind services were provided until evaluation results showed that television had an impact in reaching targeted audiences.

Television is not cheap. Standard industry costs are now $1,200 to $1,500 to produce one finished minute. The difficulty of production of the final product will cause a variance in that cost. This does not include air time costs which vary depending upon placement of the segment.

Partnering can assist in these costs. If the TV station becomes a partner in the project, the cost can drop. For example, KDSM FOX 17 covers the production costs while PCCB pays only for air time.

Grant money was used as seed money to get the television project off the ground. Success of the vignettes assisted in acquiring additional partners for future years. Partners have included: Iowa Department of Natural Resources, U.S. Army Corps of Engineers, Midwest Regional Water Safety Council, local chapter of the Audubon Society, TIP (Turn in Poacher) program, and other county conservation boards.

Broadcast Segment Production

Producing short vignettes for adults and children are very different. Adults may not like the fast pace, weird or unusual camera angles, music or digital affects that grabs kids' attention, but it works. Mike Wilson, KDSM FOX 17, states, "These environmental messages are competing for a share of a kid's mind. Kids may see 7,000 to 8,000 marketing messages each day. A kid's brain functions differently than an adults so the presentation of the message must be different."

Kid Think, Inc., a youth marketing consulting group, has found that over 85% of kids seldom or never change the channel during the breaks of a show. This is a stark contrast to adult channel surfing. Focus groups of kids conducted by Kid Think, Inc., have given insight on common elements that help kids remember the message. They are:

- Use slogans and music as long as it is "cool."
- Include humor (kids mentioned it the most).
- Add a little surprise to make the segment fun.
- Use kids as part of the vignette (they like seeing kids like themselves doing something).

Adult vignettes, especially if placed during the news, have a final look that is different from those targeting children. Elements for production for adults include:

- Slowing down the pace
- Use of dissolves from one scene to another
- Use of an adult expert to deliver the message
- Include written information defined as character generation

Evaluation

An evaluation plan is critical to determine if you are reaching your targeted audience. It is also important to know if the audience is remembering the message and if there is any follow-up by the viewer.

A yearly phone survey is conducted for "Planet Patrol Adventures." These vignettes are part of KDSM FOX 17 Kids Club which has a membership of 56,000. For the survey, the computer randomly selects kids from the membership list. Last year's results found that over 70% of those surveyed recognized the name and could tell you about these environmental vignettes. Over 50% of the kids had done some follow-up or have tried something learned from the segments.

WHO TV13 assigned a telephone "In Touch" line to "EARTHCenter 13." Viewers can call this line to receive more information about that week's subject. WHO TV13 initiated the "In Touch" line at no additional cost to the PCCB. This line assists in the determination of subject impact on viewers. A significant impact was shown when the "EARTHCenter 13" vignette on deer poaching along with the "Turn in Poacher" (TIP) hotline number was aired. According to the Department of Natural Resources TIP coordinator, poaching reports on the hotline more than doubled when compared to last year. Air time placement was planned to correlate with the opening of deer season and during the peak poaching period.

Results and Conclusions

Once your credibility is established in broadcast media the following may happen:

- TV personnel come to you as a reliable source of environmental information.
- TV personnel come to you for story ideas to use as a part of the newscast.
- Additional television opportunities become available at no cost.
- Increased positive image and visibility of agency.

Through careful planning and implementation, television can be an excellent informational and educational tool to reach audiences not being reached by other interpretive efforts.

Reference Cited

Rodriguez, Lulu, O. Farnall, J. Geske, and J.W. Peterson. 1996. *The REAP Baseline State Population Survey*. Ames, IA: Iowa State University.

"THE WETLAND SLEUTH": MARSH MALLOW MAN

Wil Reding, Interpreter
"Rent A Rambling Naturalist"
1811 West C Ave
Kalamazoo, MI 49004

ABSTRACT: *Wetlands are not wastelands! Let us see how physical appearance of a theatrical character, the sound or accent of the character and his words can be used to help us and our visitors experience this special sense of place, this ecosystem.*

KEYWORDS: *Wetlands, wastelands, marsh mallows, alien, destruction, regulation and value.*

Wetlands have been such an important aspect to us here in the Midwest, but due to misunderstanding we have not taken very good care of them (in fact, it is our actions we have not taken care of). Part of this has been do to ignorance on our part as to their benefit or value. So the question is how do we get people turned on to such a unique habitat. Let's take them to the wetlands and spend a week there—living, studying, and understanding them firsthand. No, that won't work, we are too busy and just don't have the time. Besides, it is dirty and muddy! Well then, let's bring the wetlands to them. It should be done in such a way that it will be fun, informative and memorable. A theatrical/interpretive character should do the trick, but who?

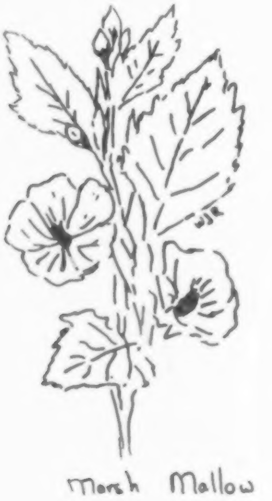


Figure 1. Food of the Gods!

Enter the plant "marsh mallow" (*Althaea officinalis*), the plot thickens, an alien from France and Germany! Now we need something that will be remembered, the final touch. S'mores—the food that when put together with graham crackers and milk chocolate will be remembered until the fire goes out! So we build our character around the plant (or is it the food?) that has so many memories attached to it already.

Figure 2. Marsh Mallow Man (Wil Reding).

With chest-high waders, a diving suit top on, a monocle (being from England and all), and a wooden pack with many things from the wetlands, he is ready to share the following information:

What Is a Wetland?
Wetlands are not wastelands! They are simply land that is wet, land that is saturated (watersoaked), at least part of the year.

BEST COPY AVAILABLE

Types of Wetlands

Marshes, swamps, bogs, fens, forested wetlands, vernal ponds, swales, shallow ponds, potholes, sloughs, stream margins, wet meadows (they can be freshwater or saltwater, temporary, permanent, static, or flowing).

Value of Wetlands

Sponge = temporary storage basin for floodwaters.

Trap = a trap for phosphates, nitrates, pesticides, and toxic metals before water enters lakes and streams.

Sieve = a filter for silt-laden runoff resulting in cleaner water entering streams and lakes.

Faucet = the recharge of groundwater and flowing springs. 42.5 million people get their drinking water from the Great Lakes. The lakes rely on wetlands to filter runoff, "purify" the water, and exchange groundwater.

Hand = barriers to erosion. Mats of wetland vegetation, with their complicated root systems, bind and protect soil against erosion.

Plants & animals = habitat for wildlife. Many species of plants and animals are provided essential breeding, nesting, feeding, and refuge thanks to wetlands. 5,000 species of plants, 190 amphibians, and one-third of all birds live in wetlands. 12 million ducks breed in wetlands every year. Almost 35% of all rare and endangered animal species, and several endangered plant species, are dependent on wetlands for survival, yet wetlands compromise only about 5% of the nation's lands.

Painting & binocular & camera = aesthetic values, bird watching, hiking, photography, and just plain looking.

Products from Wetlands

- Hunting, fishing, harvesting of marsh vegetation and aquaculture
- Timber from properly managed forested wetlands
- Cranberries, blueberries
- Peat mining (used for soil improvement, non-renewable, using it faster than it is being formed)

Wetland Destruction

Michigan 50% loss, contiguous United States 53% loss (c1990 USDI).

Wetland Regulation

Federal regulatory programs: the Clean Water Act of 1972, Section 404. Anyone who discharges dredge or fill material into "waters of the United States" must first have a permit to do so.

State regulatory programs: Goemaere-Anderson Wetland Protection Act (P.A. 203.1979). This is probably the most important regulation protecting wetlands in the state of Michigan. Under the act, persons wanting to dredge, fill, drain, or develop a wetland must first obtain a permit from the MDNR; contact the new Department of Environmental Quality for more information.

How You Can Help

- Learn more about wetlands from your school and local libraries.
- Tell others about the importance of saving wetlands.
- Identify wetlands that are in your neighborhood.
- Be a "Wetlands Watcher" and report any destruction of wetlands.
- Support federal and state legislation protecting wetlands.
- Join an organization active in wetlands conservation, or form your own group!

All I can say is that it is working to get the message out about WETLANDS!

For future information, please contact:

Rent a Rambling Naturalist
Yas Ennya Oyaka * Loon Lady * History Come Alive*
Early Midwest Arrivals * Marsh Mallow Man*
Cultural & Natural History Programming
Consulting & Training
Wil & Sarah Reding
1811 West C Ave
Kalamazoo, MI 49004
1-800-746-1458 (code 52) or (616) 343-1886

WHAT'S WILD FOR LUNCH?

Kay Young, Naturalist
Pioneers Park Nature Center
2740 A Street
Lincoln, NE 68502

ABSTRACT*: Eating wild plants is an interactive experience that can be a medium for interpreting natural and human history, demonstrating safe and sustainable practices, and enhancing awareness of seasons. Included are recipes for preparing two common wild plants and guidelines for the safe and sustainable use of edible wild plants in general.*

KEYWORDS*: Edible wild plants, interactive, interpretation, nature, history, sense of place.*

Years ago in our country, in societies where wild plants were a part of everyday life, nearly everyone knew the names and basic characteristics of the wild plants around them. They knew which ones were good to eat, what time of year was best for harvest, and where each could be found. They knew which plants made good dye or fiber or firewood or building material. Some people knew plants that could heal, and most knew which plants could be harmful.

Even very young children learned how to be safe with the common wild plants of their area. They were taught not to touch certain plants, such as poison ivy, nettles, or cacti, and were instructed about what to do should they contact them accidentally. Each year, as they helped with the gathering of greens in spring and the wild fruits and nuts of summer and fall, they learned the names of plants and how to identify those that tasted good and were safe to eat. They soon became aware of various animals that also ate those plants or lived among them. In the course of daily living, children learned the life cycles and characteristics of many plants and animals and about their interrelationships. They became aware of, and intimately involved with, the change of seasons—so much so that the natural system around them became the framework into which they placed their own lives, even as adults.

Today, children are still taught how to be safe at an early age, but the focus is more often on technological dangers: don't put objects into electrical outlets, don't turn the knobs of the stove, and so on. A little later they learn how to cross a street safely and how to deal with traffic when riding a bike. On the whole, the world in which they become competent is primarily a technological one.

Presently, the lifestyle of most Americans precludes the economic use of wild plants or even much time spent outdoors in a natural setting. As a result, most children (and many adults) have little contact with wilderness or wild things, except perhaps in parks or preserves where, of course, they must not collect things. Even if they watch nature programs on television, the animals and plants that they see are presented in such a way that it is often unclear where on the planet these particular animals are found.

We live at a time when most people have general knowledge about the great desserts, rain forests, and frozen areas of the world, but know little about the natural history of the area in which they, themselves, live. And although there may be general awareness of migration and seasonal change, more often the seasonal framework in which they live their personal lives has to do with seasonal sports, holidays, school and work schedules, and vacations. The realm in which they feel most competent is a technological one. It is little wonder then, that most people think of themselves as being in one place and "nature" as being somewhere else. Not only that, to many people, "nature" does not call up an association with sustenance, shelter, or other positives, but rather feelings of uncertainty, fear, or sometimes even repulsion.

For nature centers, natural science and history museums, or other educational facilities, edible wild plants can be a valuable medium for sharing information and for developing positive feelings about the natural environment. Being able to find and touch wild plants, then hearing stories about how they were once used, or how they are still used, heightens interest and makes remembering easier—and of course, the preparation and eating are even more fun and more memorable.

Often, wild plants are thought of as merely survival fare, but the truth is that some of the most delectable foods known are to be found among plants that grow wild. Cattail pollen is one of the gourmet treats of the world, but you must know a cattail's characteristics and life cycle to know where to find it and when to go there and whether or not the area may be polluted, and you have to sift the pollen or you'll eat "bugs" (notice all these great opportunities for relating this activity to habitat, community, seasons, environmental problems, entomology). Nettle noodles are delicious and anyone who has stinging nettles will grant permission for picking, but you need to know how to pick them or you'll get stung. You have to get them early in spring because later they get too fibrous to eat—in fact, a hundred years ago, native people and settlers used that fiber for making rope. You also need to know how to dry the nettles and make the noodles (botany, gathering ethics, outdoor safety, history, ethnobotany, cooking). The flowers of most wild violet species don't have any flavor, but they make an elegant garnish on salads or soups. You can pick as many as you want because violets produce other flowers that aren't pretty but ripen lots of seeds so there's plenty for growing more violets; also, their leaves taste a whole lot better than spinach and don't get bitter in summer. Look underneath each leaf before you pick because violets are a host plant for fritillary butterfly caterpillars and you wouldn't want to pick a leaf that was already being munched on (plant morphology and physiology, life cycles, entomology, sharing resources with wildlife). The common dandelion isn't native to the United States, but it was so valued by settlers who came to the plains that when they couldn't find this plant, they wrote home to Europe for seed. They boiled the leaves for greens, roasted the root to make "coffee," and added the flowers to scrambled eggs and vegetable pudding (botany, ethnobotany, plant morphology, history, geography, etc.). Common, plentiful wild plants, even those considered to be weeds, can form the basis for classes, events, programs, and hikes, and can become stars at a birding breakfast, a camp cookout, or a fundraising dinner.

However, activities with edible plants of any kind must not be entered into lightly. The misgivings of those who worry that such activities could lead to the destruction of rare or endangered plants, or the collection of plants from parks or other sensitive areas, or the accidental poisoning of someone, are certainly valid concerns that must be addressed by any facility planning to use edible wild plants in any way. But "could-lead-to" concerns were voiced when the possibility of fire as a management tool was first considered for prairies and when "hands-on" exhibits were first suggested for museums. Through careful planning and interpretation, such activities can become valuable learning experiences that actually heighten appreciation and understanding of an area's natural and human history. Knowing the plants that are indigenous to an area and learning which were used historically by native people or by settlers can be helpful in building a sense of that place as well as a greater public concern for the present welfare of that area.

For wild plant activities, it is important that interpreters be well informed regarding the edibility and availability of local plants and that they provide adequate verbal and written information to participants. Selected plants must be those that are abundant and ordinarily found in yards, gardens, or farming areas, or that would be suitable for planting in those areas, and explanations must be given regarding the reasons that other plants must not be collected. Suggested plants for use as food include dandelions, wild violets, lambsquarters, stinging nettles, cattails, wild roses, wild strawberries, wild plums or other locally abundant wild fruits, and locally abundant wild nuts. Using any wild plant or telling how it can be used presents an opportunity and an obligation to describe the impact on the plant and on other organisms that depend on that species for food or other needs.

In the nature center where I work, picking or collecting anything is not allowed. For edible wild plant classes, events, or hikes, we collect plants ahead of time, condition them in warm water for several hours to prevent their wilting, then carry them in a basket so they can be passed around at appropriate times. Similarly, for meals or tasting sessions, sufficient amounts of plant material are collected off-site so that nothing is taken from the nature center grounds. All of this is explained to those who participate in our activities.

The importance of obtaining reliable information cannot be stressed too strongly. Numerous guides and cookbooks about edible wild plants are available in libraries and it is best to consult several. If possible, find information specific to your area. County extensions offices often offer information about locally available wild vegetables, fruits, and nuts and usually have staff who will answer specific questions.

The following recipes and guidelines have been adapted from the book *Wild Seasons* and may be reproduced as handouts for edible wild plant activities:

Recipes

Wild violets (*Viola* species). Use only those wild violets having purple, blue, or white flowers—yellow flowered violets are reported to cause stomach upset.

The leaves of wild violets have a mild, pleasant flavor and may be picked throughout the growing season. The young leaves of spring may be used fresh in salads; older leaves are better cooked. The flowers have little flavor but make an attractive garnish for soups and salads.

Noodle Soup with Wild Violets

3 cups of noodle soup
1 cup fresh violets, loosely packed
1/2 cup light cream or milk
salt and freshly ground black pepper to taste
about 20 fresh violet flowers

Use homemade noodles or make canned or dried noodles according to the directions on the container. Add violet leaves and cook over medium heat until the leaves are tender—about 4 minutes. Add salt and pepper. Stir in the cream or milk, heat again, then pour into serving bowls. Carefully place several violet flowers in each bowl so that they float on the surface. Serve immediately.

Dandelion (*Taraxacum* species).

Dandelion Root Brew

For each cup of beverage you will need one medium-size root. Wash the roots and scrub them with a vegetable brush to remove any soil. You do not need to peel them or remove the root hairs. Split very large roots lengthwise so they will bake in the same amount of time as the smaller ones. Pat the roots dry with a paper towel and place them on a cookie sheet. Bake for about 1 hour and 15 minutes—about the same time and temperature required to bake potatoes. Check for doneness by breaking a root in two—when done, the root should be very dry and brittle and smell a little like chocolate. Small roots should be brown most of the way through, but larger roots will have a lighter colored core.

The right amount of baking is important because if not baked enough, the roots will have little flavor; if baked too long, they will taste burned. You may need to experiment a few times to determine the correct amount of baking time for your particular oven. When the roots are done, remove them from the oven and allow them to cool, then crush them with a mortar and pestle. Store in a covered container in a cool place. Use the coarse particles like ground coffee; use the powder like instant coffee. Serve plain or with milk and sugar—either way, add a drop of vanilla extract to each cup.

Guidelines for the Safe and Sustainable Use of Edible Wild Plants

Before getting started with edible wild plants, it is extremely important to know that although many wild plants are delicious and safe to eat, others are poisonous—and some of the poisonous ones taste good too. Often, people believe that if something is "natural" it must be wholesome or at least harmless, but that is not always true. Death, as well as life, is a natural process and in most areas of the world there are wild plants so poisonous that eating only a small portion could be fatal. The rules that follow cannot be emphasized too strongly. Do not hesitate to call your county agent or other plant authority if you are unsure about the identity of any plant.

1. Check information about wild plants with more than one good authority. (Books, your county agent, or a local botanist.)

2. Be certain that you have the right plant. Common names can be misleading because two or more plants may have the same common name. As much as possible, learn the botanical names of the plants you use.

3. Be certain that you have the right part of the right plant. On the same plant, the chemistry of one part may be different from the chemistry of another part. For example, the leaves may be safe to eat, but the fruit may be poisonous—or the other way around.

4. Use plants and plant parts at the right stage of maturity. Some leaves may be eaten only when immature; some fruits may be eaten only when full ripe; etc.

5. Never sample a plant to see if it is safe to eat.

6. Don't overeat any plant—be especially cautious the first time.

7. Collect from areas that have not been sprayed—better yet, grow the plants in your own yard and don't use sprays.

8. Be careful when you pick and cut. Don't gather large amounts of any plant that is not common in your area. Only abundant plants (such as dandelion) should be dug and if you do dig, replace the soil and tamp it back into place.

9. In years when wild fruits and nuts are scarce, pass them by so that birds and other wild animals will have sufficient food.

10. Do not collect anything from parks or other restricted areas. Respect the rights of other people; always obtain permission to gather from private property or from the adjacent roadside.

Reference Cited

Young, Kay. 1993. *Wild Seasons.* Lincoln: University of Nebraska Press.

Nature Center Directors/Administrators

Though we deal with tourists all day, under many circumstances, the visitor center is for us the heart of the dark side of public service. Out at the hot springs, or on a nature walk, we have the double advantage of being there ourselves and having something fun to answer questions about. Inside the visitor center, it is just us, a few exhibits, and the visitor's bulging bladder. Visitor center duty is dreaded as it begins, celebrated as it concludes. Here we learn what people really want.

—Paul Schullery, MOUNTAIN TIME, 1984

CAPITAL CAMPAIGNS—ASK QUESTIONS FIRST

Thomas D. Mullin
Executive Director
Beaver Brook Association
117 Ridge Road
Hollis, NH 03049

ABSTRACT: *The key to a successful capital campaign is to ask questions first. By participating in a formal feasibility study prior to embarking on a large campaign, the Beaver Brook Association learned much more than whether they should or should not conduct a fund-raising drive.*

KEYWORDS: *Feasibility, methodology, results.*

Background

In the fall of 1993, the president of the Beaver Brook Association, Karen Bennett, in consultation with the Board of Trustees, undertook the process of seeking the funds to conduct a feasibility study for a capital campaign. Not unlike many small land trusts and environmental learning centers, Beaver Brook had insufficient operating cash flow. While it has over 2,000 acres of land and numerous educational building complexes, it had only a full-time staff of two with two year-round part-timers and an annual budget in the $175,000 range. The desire to build up the yearly operating funds was of great concern, and the majority of the board felt that they should pursue a major fund-raising campaign. It should be noted that the association had only in the previous two years created a friends group and tried an initial annual giving campaign.

The net result after two years of operation was a membership around 200 and annual gifts amounting to $1,500. The organization had no history of grant writing, major gift campaigns, or any background or history in fund raising. When coupled with a reluctance to deal with fund-raising board members, the need for such a study was very evident to all the trustees.

Methodology

The first two steps were among the hardest. The trustees had to agree on a campaign statement followed by a target goal of what to raise for a capital campaign. This involved several meetings of the trustees plus committee meetings of the special task force created to advise and guide the project. The overall project coordinator was the newly hired executive director. After much discussion, the statement was agreed upon and the goal of $3 million was decided as the target. It should be noted that not everyone felt comfortable with that figure. Several thought it was way out of the ballpark for the association to even attempt such a fund drive. However, most felt comfortable enough for the project to go forward with that figure.

The task committee drew up a list of 100 names, of which 30 were selected to receive an invitation to participate in the formal interview process. These interviews, conducted by Dr. Krause, were meant to be exploratory in nature and were held in the strictest confidence. A questionnaire was agreed upon by the trustees, and the letter was sent to the prospective interviewees. All but one agreed to be interviewed. The one said she did not want to be interviewed but that if such a campaign was conducted we could count on her generosity (subsequent work has shown that to be very true).

After the interview process, the results were analyzed by the consultant and a report prepared. After 11 months of work, the trustees were presented with the report at their November 1995 meeting.

Results

The report was a professional and accurate portrayal of a board in transition. For over 30 years, the association had been a board-operated organization. Their first attempt at an executive director resulted in his contract not being renewed after two years of turmoil. The board was in great need of a realignment of what their responsibilities should and should not be.

The comments by those interviewed outside the organization were very favorable and had little criticism from the association. The comments by trustees were very enlightening and informative. Under the surface of the board was a great feeling of disorganization and a lack of direction by many of the trustees. This subtle discord when coupled with the projections of what could be raised brought about the following results:

- Don't conduct a capital campaign yet.
- Develop the membership program so as to build a larger constituency for fund raising.
- Further develop the annual giving program so as to identify potential donors.

- Conduct a major gift campaign on a relatively small scale ($50,000 to $100,000).

- Conduct board training in fund-raising methods and trustees' responsibilities.

The report, while accepted by the trustees, was not overwhelmingly thought to be of tremendous value. Individual trustees felt hurt by some of the comments. However, the end result is that after one and a half years, all of the recommendations have been implemented to one degree or another. Membership stands at nearly 600, annual giving is at approximately $7,500, and we are 75 percent toward our goal of $50,000 in our first major gift campaign. The board has encouraged training and formed a funds development committee. In other words, the report had a great answer for the trustees even though it wasn't to a question they had asked.

Resources

Dove, Kent E. 1988. *Conducting a Successful Capital Campaign.* New York, N.Y.: Josey Bass Publishers.

Association of Nature Center Administrators. *Fundraising for Natures Centers, Vol. 1.* Edison Electric Institute.

EFFECTIVE BEGGING

Jeffery Coats, GAPS Manager
Indy Parks
1426 West 29th Street
Indianapolis, IN 46208

Karen La Mere, Asst. Regional Park Manager
Eagle Creek Park
6515 DeLong Road
Indianapolis, IN 46278

***ABSTRACT**: Does your nature center have all the money, resources, and equipment needed for the next five years? Do you have all the community support and commitment you need? At Indy Parks we have developed a process to encourage support through Grants, Alliances, Partnerships and Sponsorships (GAPS). This paper will acquaint you with the fundamentals of this program and how you can put it to use at your facility.*

***KEYWORDS**: Grants, alliances, partnerships, and sponsorships.*

Introduction

Lets begin by saying we are not truly "begging" for funds or support! Begging is when you get something but give nothing in return. Indy Parks is giving citizens, businesses, and corporations the opportunity to partner up with a professional parks department offering quality recreation opportunities to the public. The agency involved will benefit and so will the citizens of Marion County.

What Is the G.A.P.S. program?

G ... Grants
A ... Alliances
P ... Partnerships
S ... Sponsorships

It is a multifaceted strategy to supplement limited tax revenue with new community dollars and support. Indy parks and recreation staff is able to negotiate more community contributions of cash, goods, services, trade-outs, and volunteer hours working toward particular projects or programs. The key to success with this program is to determine which category you are going to use to fund a particular project.

We have defined each of the following categories:

- **Grant**: Donations or gifts of cash or in-kind services that do not require any marketing for the donor

- **Alliance**: Expenses are reduced or new revenue is generated through bartering and trade-outs with organizations not invoicing each other.

- **Partnership**: Neighborhood or community group devoting volunteer hours for a particular project.

- **Sponsorship:** Business investors that are expecting some form of marketing or advertising in return for their support.

Potential contributors are given an opportunity to determine which category they are interested in participating in.

Goals of the Program

Indy Parks was at a turning point when the GAPS program was established. There was an important need to upgrade our image in the city, establish new funding sources, and increase community support. We had just completed a strategic plan outlining key needs of the community. To accomplish these goals we needed to increase funding at a time of downsizing and budget constraints. We established four main goals for the program:

1. To generate new sources of revenue through grants and sponsorships.

2. To reduce expenses through bartering, trade-outs and volunteers.

3. To identify new target markets through new partnerships.

4. To increase community support and advocacy for parks and recreation.

GAPS Strategies

In an effort to make the program functional, a set of strategies were established:

- Identify community needs.
- Identify department priorities.
- Train field staff.
- Increase volunteer involvement.
- Solicit and empower community groups to fund raise for their parks.
- Involve the Parks Foundation.
- Create a data base to track success.

How To's...

Begin by selecting a particular project. Put together an outline including the total dollar value including: materials, supplies, educational materials needed to complete the project. Remember to include staff and volunteer time. Next, determine who in your community can help you complete the project and what they will need in exchange for their commitment.

One project may fall into different categories in the GAPS program. For example, if you are designing a wildlife viewing area, a grant can be written for funds to purchase plant material, a local garden club may devote volunteer hours to plant, another nursery may donate plants in exchange for programs on landscaping for wildlife. The opportunities available are endless. Just remember to be creative and not afraid to ask. All a potential donor can say is no if they are not interested.

Tracking

When working with the GAPS program it is imperative to keep accurate records of Grants, Alliances, Partnerships and Sponsorships. A data base can be set up to track this information. At Indy Parks, we generally track the business, project type, name of the project, contact person, and other pertinent information. This allows us to establish a list for future reference.

Conclusion

As you can see, we are not truly "begging" for dollars but establishing instead, a professional working relationship with businesses, industry, and individuals in the community. At Indy Parks, we have been able to renovate facilities, begin the planning process to construct a new nature center and offer recreational and educational programs that would not have been possible three years ago.

Remember: "It's not begging, it's an opportunity!"

Program Management/ Administration/Planning/ Partnerships

Human beings have always been an unfinished species, a story in the middle, a succession of families, tribes and societies in transition to new awareness. We're the only species that over and over again has deliberately transformed our surroundings in order to stretch our capacity for understanding and provoke new accomplishments. And our growing and enhanced understanding is our most valuable, and our most vulnerable, inheritance.

—*Tony Hiss, THE EXPERIENCE OF PLACE, 1990*

THE CHANGING ROLE OF THE PROFESSIONAL LAND MANAGER

George E. Tabb, Jr.
Chief, Land Management Section
Natural Resources Management Branch
U.S. Army Corps of Engineers
Washington, D.C. 20314-1000

ABSTRACT: *Over the years, the role of the professional land manager has changed from that of being "the" expert on all aspects of land management to being a collector of public comment upon which public land management decisions are made. This creates significant problems for some land managers as they try to shift into their new role. This presentation focuses on the new and changing aspects of the professional land manager and provides some tips on how to make this transition a positive experience both for the land manager and the public he or she serves.*

KEYWORDS: *Land manager, changing role, public comment, transition.*

The Past

When I was in college, I was taught that the role of the professional land manager was to be "the" person responsible for all land management decisions to be made on the lands for which he or she is responsible. The land manager was trained how to make decisions on public land management issues. At that time, the general public relied on the professional land manager to make the "correct" decisions related to management of public lands. The professional land manager was "the" decision maker.

Today

Today, the situation is much different. The public is much more educated and informed about environmental and public land management issues than they have been in the past. They have come to realize that if they do not take a position on the issues, decisions may be made that they may not agree with. They are interested and want to be involved in decision making regarding "their" public lands. In fact, they are demanding to be involved. Public land managers who are not aware of this shift in public sentiment are in for a difficult time.

As a result, most public agencies today have established some sort of public input or involvement process which they use in making decisions on the management of public lands. The forums used by public agencies vary. They range from public meetings to the establishment of advisory groups. Even with these accommodations to incorporate public input, I feel we need to do more.

Many managers who were educated in the same time frame as me are in a dilemma. They were trained to think and operate within certain parameters. In effect, they are in a box. Today these boxes are being burned and those managers of my generation are uncertain about how they should proceed with making decisions affecting public lands. If they do things the way they have been trained to do them they are alienating the public and creating management problems. If they fully embrace the public and their concerns they view themselves as weak managers who do nothing more than give the public everything they want.

What Is the Right Thing to Do?

In today's environment of shrinking budgets and staffing resources, we as land managers must develop innovative techniques to solve these problems. In this case, being innovative means being open to new concepts, ideas, and approaches.

It seems to me that if people want to take part in the decision making process involving public lands they, also, must be willing to make commitments. One of these commitments is to fully understand the problem before they attempt to formulate a solution. It makes sense to me for the public lands manager to directly involve these people in the management of the lands. That way they may gain knowledge and understanding of the problem. For example, if a particular individual is very vocal about some pending land management decision or issue, get them directly involved by asking them to volunteer a portion of their time to work directly on this issue. Through direct involvement the lines of communication become open, thoughts and ideas can be shared in both directions, and reasonable decisions on important issues can be reached.

The short-term benefits of these types of ideas are undoubtedly small, but eventually constituents will develop which can result in strong political support and backing in times of need.

Another point needs to be made here. Not only managers are involved in building constituencies but the entire staff should be involved. We should always keep in mind that the reason we are involved in managing the public lands is to serve the general public. In short, we are public servants and we should act that way. For example, all employees should keep in mind how they would like to be treated when they visit the area, when the public offers suggestions or ideas, or when they as citizens are involved in a law enforcement situation. The days of the ranger or manager acting as the all knowing expert are gone. We truly must listen to our public, consider their ideas and suggestions, and make changes in our practices based on this public input. As the old saying goes, "There are no stupid questions, just stupid answers."

Most of us are involved in interpretation in one way or another. We view ourselves as experts in our chosen area of knowledge. Even as such, we must constantly ask ourselves, "How would I like to be treated? Or what kind of answer would I like to have?" We must discipline ourselves to treat everyone as a worthwhile individual. I understand what it is like to sit in a visitor center and be asked the same questions fifty or sixty times a day. The last person to ask the question deserves the same courteous response and respect as the first one asking it.

The Management Team

The same can be said for the relationship between the manager and his or her management team members. The manager and his/her team must understand and believe in what they are trying to accomplish as a group. Negative managers or team members often result in a negative impression of the area by visitors. Managers must treat their employees with respect and must thoroughly consider their ideas and suggestions. At the same time, staff members must respect the decisions of the manager even if it goes against their own personal convictions. There is no place in today's world for a manager who says "I am the boss and you are the employee. You should stay in your place. I know what's best for you." Friction between managers and staffs often results in trouble for the public.

One of the most important things a manager should do is to keep his staff informed. This can be accomplished through a number of means. One of the best I have seen is regular staff meetings. Staff meetings should not be a one way street but rather information should flow in two directions. Managers should share information on upcoming actions or decisions and provide opportunities for employees to provide input. Employees on the other hand have a responsibility to share with the manager with what is happening where "the rubber meets the road." Honest sharing creates a healthy work atmosphere which ultimately results in a much better experience for the visitors, which should be one of our main goals.

The best way to start effective staff meetings is to lay out the ground rules up front. Some suggestions are that everyone should have a part in the meeting. For example, everyone should report on what they are doing and ask for help of the others where they need it. A specific time limit should be placed on the length of the meeting. Managers should look for opportunities to build consensus rather than always "making decisions." Meaty assignments should be given to all employees with specific direction on what the final product should look like and when it should be completed. How the task is to be completed should be left up to the employee to figure out. If they need help, ideas, or suggestions, the manager and other staff members should provide them when asked.

The Public

Managers who are successful in today's environment treat interested members of the public much the same as members of his/her staff. Information should be willingly shared and honest exchanges of views should take place. How can this be accomplished you may ask. Some managers have employed techniques such as holding an open house one day a year. During this day, members of the interested public are invited to come visit the area and meet the management staff. They can be given a behind-the-scenes tour or be provided with a briefing on current and future operations. This is an excellent opportunity to obtain feedback from these visitors. The more that can be done to involve them in operations of the area or facility, the stronger the constituency that will be developed over time. These types of ideas fit very nicely with our role as public servants. As such, the public has a right to know what decisions are being made on their public lands and how they are being operated.

The Future

In the future, I see a continued swing of the public toward greater participatory management. Some progressive managers and other staff members have developed techniques to deal effectively with these challenges. However, we all need to do more. We need to develop and share new ideas and techniques if we are to successfully fulfill our responsibilities as public servants and land managers.

DOLLARS AND SENSE

Barbara L. Brown
Program Officer, Santa Barbara Foundation
15 E. Carrillo Street
Santa Barbara, CA 93101

ABSTRACT: Agencies must diversify their income streams or be prepared to scale back, merge, or go out of business. The best source of funding is through cultivation and personal solicitation but, in order to be successful, the proper groundwork must be laid, including a solid program or project, a strong volunteer base, and accurate record keeping. Some of the same techniques used for personal solicitation apply to foundations. These techniques work and can be learned by anyone.

KEYWORDS: Volunteers, personal solicitation, foundation support.

Introduction

Fund raising is characterized by irregular or occasional appeals to the public that relate to short-term needs. Fund development is the continuing and evolving process of generating public support.

Understanding the difference between fund raising and fund development—and making the conscious decision to embark on a fund development program—separates the agencies interested in long-term results from those that are emerging or untutored. Raising money, of course, is the central purpose of fund development, but simple fund raising, unless it is an integral part of an overall strategy, will only result in funds for immediate needs. A solid action plan combined with a commitment to donor cultivation, an activity as important as the art of solicitation itself, will lead to success.

A complete fund development plan includes many different activities such as board and staff solicitation, personal solicitation of major donors/prospects, an annual mail appeal, support from federated fundraising organizations, government agencies, corporations and foundations, special events, and phonathons. Underlying all of these activities is an honest assessment of the organization, a dedicated group of volunteers, and excellent record keeping. This paper will deal briefly with the importance of these three elements as well as discuss personal solicitation and tips to remember when approaching foundations for support.

Review Your Agency and Programs: Are They Worthy of Support?

Since the success of fund development efforts depends upon the responsiveness of an organization to the needs and desires of the public, the gathering of internal and external data and the unbiased analysis of this information is the place an agency needs to start.

One of the best models is the self-evaluation process used by Girls Incorporated, a national network of over 300 centers serving girls ages 5–18 through age-appropriate educational programs. Each affiliate is required to take an in-depth look every five years at its organizational structure, finance and reporting procedures, personnel, operations, program, and facilities. The process takes two to three months to complete and involves the board president, executive director, and from 18 to 30 individuals who comprise the "Self-Evaluation Team." A combination of surveys/checklists, focus-groups, and informational meetings leads to the production of a document that gives the affiliate an understanding of its strengths and weaknesses.

Part of a self-evaluation will involve looking at the professionalism of the organization as it relates to governance. It is easy to get wrapped up in the day-to-day operations and forget where the articles of incorporation and by-laws are filed, schedule time to review the insurance policies, analyze the record keeping, procedures, etc. An agency may deliver a wonderful program deserving financial support but, unless careful attention is paid to details such as these, it will be difficult to get and keep donors.

Have You Had Your (Tax) Break Today?

Charitable gifts come largely from individuals and a basic knowledge of human behavior is necessary for successful fund development. There are many reasons why people give. A partial list would include altruism, gratitude for services received, a desire to be associated with a prestigious group, recognition, immortality, and tax benefits.

Government agencies have begun establishing 501(c)3 affiliate organizations in order to offer the tax incentives donors are looking for and to access financial support from foundations whose guidelines won't allow grants to public entities. Libraries have had friends groups in place for years, and many school districts are beginning to establish foundations. This allows for the diversification of an agency's income stream, crucial when looking at long-term survival.

If an agency is not designated as a 501(c)3, is unable to establish an affiliate nonprofit organization, or is in the process of doing so, an alternative way of seeking funds is through collaboration. Since the pressure on financial resources has increased dramatically, funders are investing more and more in projects that involve several entities. In these cases, the fiscal agent—or lead applicant—has the 501(c)3 designation; some of the partners may not.

Accurate Records Lay the Groundwork

Agencies that have a professional approach to program development/implementation and governance will be able to translate that attention to detail into the backbone of fund development: research and record keeping. These two activities are interdependent: a lot can be learned by researching past giving records, and most research becomes a part of donor/prospect records.

In combination with research and record keeping is cultivation, the activity that prepares the way for a successful solicitation. The key to the process is thinking of every prospect as a person (even if it is a corporation or foundation), and designing specific activities for each one. The goal is to increase both the interest and knowledge of donors and prospects in the agency and its programs.

The cultivation process can be summed up in five steps: identification, information, interest, involvement, and investment.

Volunteer Leadership Is Crucial!

Leadership in fund development must be clearly demonstrated by members of the board of directors. When volunteers are recruited, the "job description" should stress the responsibility a board member is assuming for the fiscal health of the agency.

"Give, get, or get off" sounds harsh, but if an individual is not in a position to make a gift every year and access their personal contacts, they should make their seat at the table available to someone else. Funding sources, whether they are individuals, foundations or corporations, expect that those closest to the organization will back up their belief in the agency by making a financial contribution. Staff is also expected to make a gift—and the gift has to be real, not an in-kind donation of time. The actual dollar amount from the board and staff is not important; it is important to be able to say that support for the agency is "100%—in every way!" After all, if the true believers don't give, why should anyone else?

A request for support is more persuasive when coming from a volunteer. It is easy for a prospect to feel that a staff member is driven by a need to raise their own salary; a volunteer is perceived as having more altruistic motives. And when the volunteer can say, "Join me," it makes the request all the more powerful.

Ask and Ye Shall Receive

Since 89% of all philanthropic dollars come from individuals, personal solicitation is the most effective way to raise funds for an organization or program. It is volunteer intensive and should be reserved for the segment of the prospect/donor list that will yield the largest return.

Success in securing contributions is not based on luck. It is based on solid planning and preparation, and requires informed and trained volunteers who believe in the importance of the agency to the community. Enthusiasm and conviction are contagious—and hard to turn down!

In preparation, the volunteer should:

- Know the agency's story
- Make his/her generous contribution first
- Plan the visit in advance
- See the most likely prospect first
- Take another volunteer along

During the visit, the volunteer should:

- Say, "I asked to call on you!"
- Relate their own personal experiences with the agency
- Not apologize!
- Ask for a specific amount—and aim high!
- Be tactful, enthusiastic, sincere and persistent
- Walk away with a definite commitment

Afterward, the volunteer must:

- Follow through immediately with a confirmation of the commitment and a personal thank-you note

Experience has shown that campaigns fall short of their goal most often because prospects simply aren't asked to consider a gift...not because they didn't want to support the project!

Foundations Have to Give It Away!

There is no magic to writing an effective proposal, but there are no guarantees that a single method will work every time. A grant writer will never go wrong by putting energy into presenting a solid, detailed case for funding. From a funder's perspective, a complete, thoroughly developed proposal that takes into account the foundation's specific guidelines and area of interest is a joy to behold. Even if the attempt is unsuccessful, make it a learning experience and build on it.

When preparing a proposal, *do:*

- Know your funding source
- Know your community
- Follow the guidelines
- Write clearly
- Be logical and balanced
- Be specific and thorough
- Critique your own proposal before the funder does
- Be positive

When preparing a proposal, *don't:*

- Argue with a funder's assumptions
- Philosophize
- Confuse the organization's needs with those of the clients
- Assume the reviewers know the problem or program
- Include surprises
- Promise more than can be delivered

Think of a proposal as an opportunity for a grantmaker to become a part of a winning team—yours!

Get Ready...Outcome Funding Is Coming!

I would be remiss if I did not mention "outcome funding." This is a framework being utilized by more and more funders and, as a result, forced upon agencies. Briefly, the outcome funding model assumes that success is measured by an enduring change in behavior. Under this scenario, the number of people who come to the local natural history museum during the course of a year is no longer a measurable goal. A more appropriate goal might be stated this way: "Of the 17,000 people who visit the museum each year, 5,000 of them will become members. Of the 5,000 who become members, 50 will volunteer for the docent program and still be active one year later."

Every model has its own language, and outcome funding is no different. Unlike other models however, the new terminology is based on words whose definitions the average person understands. For example, the funder becomes the investor and the service provider is now the project implementor. The people the project implementor interacts with are customers. Goals are performance targets and the checkpoints set up along the way are milestones.

In addition to terminology, the expectations between the investor and the project implementor revolve around a straight-forward set of questions. The investor asks, "What results are we buying?", "What are the chances for success?", and "Are we paying the lowest costs for the best results?" The project implementor asks, "What results did I commit to achieving?", "Can I do it, both financially and programmatically?", and "What did we learn?"

Though models come and go, this one will stay because it involves a partnership/dialogue between the investor and the program implementor, and the application itself is much more "universal." The nonprofits that can adapt to this new way of thinking will be in the best position to access available funds.

One More New Development

Some of the national funders are beginning to rely on community foundations for information about the agencies in their area. A few are even making grants directly to the community foundations for distribution locally. There are over 400 of these foundations in the United States. To be in a position to take advantage of this trend, begin cultivating the one near you!

Resources

The staff and volunteers within an agency responsible for fund development can draw upon the support of several resource groups. The Grantsmanship Center (Los Angeles), The Foundation Center (New York), The Fund Raising School (Indianapolis), National Center for Nonprofit Boards (Washington, D.C.), and the National Society of Fund Raising Executives/NSFRE (Virginia) have training programs and produce publications. In addition, your local reference librarian will help you find the information you need to be successful in your quest for funding.

References

California Community Foundation. 1990. *Resources for Your Nonprofit Organization: A How-To-Do-It Handbook.* Los Angeles: California Community Foundation.

Balopole, Marge G. 1994. *Philanthropic Foundations and the Nonprofit Sector in the United States.* Conrad Hilton Foundation.

Hopkins, Bruce R. 1989. *Starting and Managing a Nonprofit Organization: A Legal Guide.* New York: John Wiley & Sons.

La Rocca, John. *Outcome Funding.* Rensselaerville, New York: The Innovation Group, The Rensselaerville Institute.

Mecke, Margaret. 1984. *Fund Development in Girl Scouting.* New York: Girl Scouts of the U.S.A.

New, A. L. 1991. *Raising More Money for Your Nonprofit Organization: A Guide to Evaluating and Improving Your Fundraising.* Indiana: The Foundation Center.

FROM GUARDS TO GUIDES: INCORPORATING CUSTOMER SERVICE PROFESSIONALS INTO INTERPRETIVE PROGRAM MANAGEMENT

Lisa Woolford
Director of Interpretive and Guest Services
John G. Shedd Aquarium
1200 S. Lake Shore Drive
Chicago, IL 60605

ABSTRACT: *Guests at our sites have higher expectations of our interpretive programs and customer service. Meanwhile, managers are expected to do more with less. With effective planning, managers can strategically develop non-interpretive staff into competent interpreters while improving their customer service.*

KEYWORDS: *Human resources, customer service, planning, training, coaching/evaluation, recognition, communication.*

Introduction

Whether in an aquarium or zoo, national park or theme park, people have many choices as how to spend their recreational time. The quality of the experience becomes a very important factor in the decision-making process, and educational opportunities and service are often primary. Communicating content about the site is the job of the interpreter, making learning relevant yet entertaining. The customer service professionals are left to make all other aspects of the guest's experience enjoyable, from giving directions to enforcing rules. The reality is that these two disciplines have a great deal of overlap based on their mutual audience. The John G. Shedd Aquarium recently adopted a new front-line management strategy that combines the customer service and interpretive programs. The result has been a quality guest experience that positions the aquarium as one of the most enjoyable places to spend leisurely time in Chicago.

A Solution to Front-Line Challenges

Both interpreters and customer service professionals face many challenges in effectively meeting the needs of the public. Managers should consider developing a plan that conjointly addresses these challenges and maximizes human resources. This solution can benefit all parties involved—the guests, the front-line employees and the managers!

Challenges from the Interpreter's Perspective

"All I want to do is inspire my audience, but they are more interested in the bathrooms." Perhaps this is one of the most common complaints from interpreters. It is an unavoidable reality that guests are focused on their basic needs, like food and restrooms. This can be discouraging to the interpreter who feels he is competing with McDonald's. Sometimes the interpreter actually imparts a negative impression on the guest because of his or her frustration with not being able to meet the interpretive objectives. A sensitivity to customer service is paramount.

Challenges from the Customer Service Professional's Perspective

Customer service professionals, commonly considered "guards" by the public and many managers, are often expected to conduct miracles in order to satisfy the guest. Regulating rules while promoting an enjoyable experience is exhausting. It can be difficult to remain motivated under these circumstances, which explains why so many facilities offer poor service and have high employee turnover. Morale is key, but opportunities for personal fulfillment are limited.

Challenges from the Manager's Perspective—and the Solution!

Ask any interpretive program manager his or her biggest challenge, and you'll most likely hear "resources." Either the ever-shrinking budget is too small to properly staff the program or volunteer usage is so unreliable that effective program implementation is almost impossible. Under these circumstances, managers are required to get creative and look toward new ways to get the job done. An economically efficient option is to take a close look at the site's non-interpretive staff, to identify those customer service employees who have a spare hour during the day when they could be interpreting. If you add up one hour from fifty employees, you have a sizable interpretive staff! In turn, the interpretive manager can offer some solutions to improve customer service by offering staff development opportunities. Then comes the challenge of training employees who potentially have little or no background in interpretation to become inspiring staff. This change process takes commitment, but the benefits far outweigh the challenges.

Benefits of Developing Non-Interpretive Staff into Interpreters

1. Financial

- Maximum use of staff resources
- Repeat customer visitation (based on customer satisfaction)
- Reduced employee turnover (based on employee satisfaction)

2. Staff Morale

- Opportunities for personal growth/learning through training and evaluation
- Guest appreciation
- Opportunities for professional advancement

3. Customer Satisfaction

- An improved overall guest experience/improved customer service
- More opportunities for guests to participate in learning experiences

The Shedd Aquarium Case Study

In 1994, visitor feedback to the Shedd Aquarium revealed an unacceptable number of dissatisfied guests. Employee morale on the front line was low, and service seemed to be suffering. At the same time, interpretive efforts were increasing. More programs were being developed, but volunteers were lacking to staff these programs. The solution to both problems was to train customer service staff to implement interpretive programs. Through effective planning and management, the aquarium was able to increase the quantity of interpretation and also improve the quality of service.

Planning

It is not appropriate to assume that anyone can be an effective interpreter just by putting on the uniform. A plan must be considered that strategically develops non-interpreters into inspiring interpreters. The aquarium's plan is driven by an employment continuum (Figure 1) that outlines staff requirements as well as opportunities that will help improve employee performance and potentially lead to advancement within the organization. Key areas that support this continuum are training, coaching/evaluation, recognition, and communication.

Training

Since advancement along the employment continuum is contingent on goal achievement, it is vital that effective training be provided to allow employees to meet these goals. Each training program is designed with specific objectives, such as knowledge and skills (for example, basic beluga whale natural history and questioning techniques). It is highly advantageous for the training programs to have defined objectives and dates available for communication when non-interpretive staff are invited to become interpreters. This will take the "what's next?" worries out of the change process and leave employees knowing exactly how and when the process will take place.

Coaching/Evaluation

This area may be the most challenging in the change process when a large number of employees are involved. You may be used to giving feedback to your volunteers, but staff tend to require more frequent and specific input from their supervisors. You must be prepared to have employees along every level of the continuum and be able to meet each individual's coaching and evaluation needs. This is the time-consuming part of the process and can be a handful to manage. Good time management and organizational skills are vital.

You must also let employees know that they will be regularly evaluated. Evaluations should be both written (standard performance appraisal) and "hands-on" (on-the-floor) and should take place at least every four months. This provides regular opportunities for the supervisor to offer assistance and help the interpreter move up the continuum. You will see a substantial boost in morale from employees who know where they stand in the eyes of their supervisor.

Recognition

There are endless forms of recognition for employees. The interpretive continuum recognizes employees by offering increased opportunities to do "fun" things. For instance, with proper training and goal achievement, an exceptional interpreter can be recognized as an orientation speaker. This advanced position benefits the interpreter by developing new skills and offering a more diverse job experience.

You cannot overlook the traditional methods of recognition that offer immediate forms of positive feedback. The aquarium institutes a "Shining Star" program which recognizes any employee who receives a letter of gratitude for efforts above and beyond the call of duty. In addition to a star lapel pin for every exceptional interpretive or service effort, the employee is rewarded an incentive (like a restaurant or theater gift certificate) after receiving a predetermined number of stars. This program illustrates that daily efforts are acknowledged and appreciated.

Figure 1. Interpretive Continuum

	Interpreter A Entry Level	**Interpreter B** Ask Me	**Interpreter C** Master Interpreter	**Interpreter D** Narrator
Minimum Requirements	• See Position Description • Good job performance reflected on appraisals • "Aquatic Science" self-study program and final exam • Complete the "Find the Fish" program	• Fulfill all Interpreter A requirements • Good job performance reflected on appraisals • Complete "Ask Me" workshops, take home tests and final exam	• Fulfill all Interpreter B requirements • Good job performance reflected on appraisals • Complete "Master Interpreter" self-study requirements and final exam	• Fulfill all Interpreter C requirements • Good job performance reflected on appraisals
Maintenance Requirements	• Attend "Coaching" workshop and coach new employees at customer service posts • Interpret with level B or C at interpretive stations • Complete Special Exhibit self-study	• Coach new Interpreters at interpretive posts • Attend "Advanced Interpretation" workshop • Interpret with objects at interpretive stations • Complete Special Exhibit exam	• Attend "Tour Techniques" workshop • Provide front-of-the-scenes tours • Complete Special Exhibit exam	• Conduct narrations and orientations • Complete Special Exhibit exam
Opportunities	• Participate in departmental teams • Attend greeter training and participate in summer greeter program	• Attend "Orientation Techniques" workshop/ Orientation Speaker opportunity (audition) • Attend "Animal Touch Program" workshop/Handler opportunity • Participate in Shedd Teams	• Work with Aquarium Resource Center to respond to public inquiries • Teach "Snails to Whales" • Teach "Ask Me" workshops	• Teach "Orientation Techniques" • Teach "Tour Techniques" workshops
Evaluations	• Mid-year performance appraisals • Year-end performance appraisal	• "On the floor" interpretive evaluations • Mid-year performance appraisals • Year-end performance appraisal	• Tour techniques evaluations • Mid-year performance appraisals • Year-end performance appraisal	• Narration and orientation evaluations • Mid-year performance appraisals • Year-end performance appraisal
Pay Scale/Hr	----	----	----*	----

*$xx xx hourly differential for Interpreters that teach "Snails to Whales" and/or "Ask Me" workshops

Revised 8/96

Communication

No matter how detailed your plan, you must be sure that effective communication is an integral part of everything you do. Some non-interpretive staff will embrace the change you propose, excited for the opportunity to learn and share knowledge with the public. Others will find this "opportunity" terrifying. Perhaps they haven't been in school for 15 years! Open and consistent communication will help ease the fears of the apprehensive and further excite the eager.

GRANT WRITING BASICS

Jolene Redvale
San Bernardino County Museum
2024 Orange Tree Lane
Redlands, CA 92374

Elizabeth Dickey
Idaho Botanical Garden
PO Box 2140
Boise, ID 83701

ABSTRACT: *You can find funding sources by looking at local businesses and examining grant source directories. Proposals sent to either corporate sponsors or a formal granting agency should contain much of the same information: a summary, project description, audience information, project personnel, need for project, budget, evaluation of project, and plans for project continuation.*

KEYWORDS: *Funding sources, grant applications, partnerships, corporate sponsorship*

Introduction

Often an organization has worthwhile and needed projects but not the funding to complete them. Two options include going after a corporate sponsor or applying for a formal grant. The approach you use for requesting funds is a little different for the two; however, they both will require a written proposal at some point. A corporate sponsor is a business from which you ask for support, either monies, materials or a service. There often is no formal application, but they will need to know about your agency and project. When you decide to pursue a corporate sponsor you need to research the local businesses. They will be more likely to support your program if you show how it will benefit their employees and/or clientele. When pursuing a formal grant, your agency can apply by itself or in a partnership with other agencies with similar goals. Some granting organizations only give funds to partnerships. Formal grant proposals often must meet rigid guidelines determined by the granting agency. Finding an appropriate formal funding source will be discussed next.

Identifying Foundations

Grants are usually offered by government agencies and foundations. Government funds can either be available to anyone or may be earmarked for a particular agency, such as, the National Park Foundation only gives money to national parks. Private foundation funding is usually granted only to nonprofit 501(c)(3) of the Internal Revenue Code organizations. If your organization does not qualify for that tax status perhaps a "friends" group could be formed that will apply for your funding. Some government organizations also qualify as a "public charity." Grants for those must be for charitable purposes and cannot be for general support.

The simplest method for locating a government or private foundation funding source is to look through a funding guide. An excellent resource is the Foundation Center. It has at least one cooperating collection in each state which has extensive guides to foundations, and books on how to apply for grants. To find their library nearest you, call (800)424-9836. If they do not have a cooperating library near you, your local library will still be helpful, or you can buy the books directly from the Foundation Center. Also, you can access the Foundation Center's on-line data base through the commercial vendor Dialog Information Services, Inc. Some foundation guides list foundations by broad subject areas such as The Foundation Grant Index. Others provide lists of grants for specific subject areas, for example, "National Directory of Philanthropy for Native Americans" or "Grants for Elementary and Secondary Education."

Researching Foundations

After you decide which foundations would be most likely to help you, research the foundations. With the information you gather you can tailor your proposal to best match the foundation's "personality" and interests. You will want to know what size grants they tend to give and what types of projects they like to support. If the foundation publishes an annual report, you can request a copy from them. All foundations must file an IRS return form 990-PF, which shows how much money they gave to which organizations. You can request returns from your state's attorney general's office or from libraries associated with the Foundation Center. Libraries may have other foundation information sources as well. These include foundation newsletters, press releases, nonprofit organization journals, and press clippings. Data concerning people associated with specific foundations can be found in the Foundation Center's guide "Foundation Trustee, Officer and Donor Index" in Vol. 2 of the *Guide to U.S. Foundations.* It is also extremely helpful to meet with the foundation contact person. You can find out much about the foundation and make the foundation familiar with your cause and project. Invite the foundation representative to your site if possible so that your organization becomes a known entity. After completing your research you should figure out your "plan of attack." Based upon the information you gathered, decide what would be the best approach to capturing each foundation's attention. Proposals should be written with a specific foundation in mind. Contact the foundations you will approach for funds and request their application guidelines and forms. Each foundation may ask for information in a different manner but all proposals should include the same general information categories.

Proposal Components

An application or proposal can take just about any form. Sometimes they have very specific sections to complete. Other times they ask for certain information in paragraph form, and you are expected to present it in a concise and readable narrative. Below are some major sections that you can expect to address for just about any proposal.Order, format, and content will vary, but the basic information is still required. It may be helpful to design your project using these sections as your format. This will greatly reduce the amount of work needed to meet the format requested by the funding organization and you can easily cut and paste to meet their Request for Proposal (RFP).

Summary of the Project

This is usually less than one page, and may only be four to five lines. The summary is packed with information, often including everything described below.

Project Description

This section describes what the project will do. Goals and objectives (measurable) may go in this section, or may be asked for in a separate section of the proposal.

Audience

This section describes who will be served, and why this audience is selected.

Personnel

This section should describe the people from your organization who will be working on the project, including their qualifications. Resumes of lead personnel are often requested. Consultants can also be described here, and resumes included. If you will be hiring someone to carry out project activities, include a job and task description along with qualifications required.

Need

Here is the meat of your proposal. Describe the need for the project; why does your audience need this project; how will it benefit them; what is lacking that this project will fulfill; why is this audience in need of these services? Even though this is the real substance of the proposal, you often have minimal space to report it. Practice concise writing—the fewer the words, the better.

Budget

This critical section is where you state how much money you will need for the project, how much you are asking them for, where the rest of the funds are coming from, and how their money will be spent. An RFP often has broad expenditure categories such as salaries (and benefits), printing and office type materials, materials the project participants may receive, payment for consultants or participant stipends, and building or improvement funds. Be sure that you understand how the RFP asks you to split these categories. The budget section often asks for a numerical summary as well as a narrative description of how the funds will be spent. Since almost all funders require some kind of matching funds or services, these will be described just as money requested is, but clearly distinguished as matching resources.

Evaluation and Project Continuation

Most funders want to know how you will evaluate the project once completed, and how you will address changes if the project does not meet your original goals. Also, projects are expected to continue after the grant term, and RFPs often ask for a 2- to 5-year continuation plan.

Proposal Writing Tips

It is important to adhere to the forms provided the funding source. Remember, too, to pay attention to the page limits; the formatting of the pages, including margins, line spaces and type size; and to include all information that is requested. Some funders will not even consider applications that do not follow the basic guidelines. It is a terrible waste to have an application simply tossed out because there are too many pages, or the sections are not properly completed.

It is essential to make your proposal easy to read and pleasant to look at, grant readers have a tough job to do. Use bold section headings, and put spaces between sections. Do not burden the readers with minute details and flowery narration. Use as few words as possible. Do not over describe ideas that are generally accepted in your field or area. On the other hand, do not assume that the readers are familiar with subject-specific concepts or problems. An RFP or application usually tells you who the readers will be and whether they are from the particular subject area or field, so you can gauge how detailed you need to be in your descriptions.

One mistake grant writers often make is trying to design a project to fit a particular funding source. This is extremely difficult, and usually will show through in the proposal. Spend time designing your project, and then seek funding that matches it. Funders often have very specific issues that they are interested in supporting. Relate your program to the funder's specifications—how will your project help the funder to meet its goals for the money available.

Remember to make contact with someone from the funding source. You can save yourself a lot of work if you learn early that a particular funder is not interested in the kind of project you have designed. It is acceptable and even encouraged to ask questions about your project as it develops. Describe your project to your funding contact and ask if it is something the funder would consider. Your contact may tell you that the subject and issues your project address are fine, but that, for example, your method or specific audience should be changed. By talking with a representative of a funding source, you can often learn of other funding sources, other organizations who are doing similar projects, and ideas for projects for the future.

INTERPRETING ADULT EXHIBITS FOR CHILDREN

Maria G.C. Papesh and Tess Shatzer
Park Rangers, Lowell National Historical Park
67 Kirk Street
Lowell, MA 01852

ABSTRACT: *Sick of role plays? Wondering how to inspire those young adults that visit your site? Come take a look at different questioning formats and techniques to aid and assist you in bringing exhibits designed for the adult visitor to life for children. The main focus of the workshop will help you reach children in grades 4–8 through guided discovery techniques, alternate questioning methods, and innovative museum exploration.*

KEYWORDS: *Education, inspiration, sensory, involvement.*

Introduction

One of an interpreter's most challenging tasks is to interpret a site or exhibit for children; especially when that site has been designed with an adult audience in mind. At Lowell National Historical Park (LNHP) we attempt to do this on a daily basis. The majority of students visiting LNHP are participating in curriculum-based programs hosted by the Tsongas Industrial History Center (TIHC), a cooperative venture between LNHP and University of Massachusetts-Lowell, College of Education. A significant number of children's groups (be it classes, scout troops, etc.) choose to visit our sites on a more freelance agenda, not unlike most parks. This paper will outline a few techniques we have found to be successful.

Make It Personal

One key to reaching student audiences is to make the exhibit personal to them and to get them involved in a way that corresponds with their particular learning style. Some students may learn best through auditory means, some must touch the objects (or a facsimile of it), and still others must see it work or move to fully understand. Comprehension can be achieved by allowing students to acquire the information you want them to obtain from the museum or exhibit, rather than having you give the students information. Using a variety of techniques can help achieve this goal. We will present two options.

Guided discovery, where the students embark on a kind of scavenger hunt, is a challenging and exciting way to engage students in museum exploration. Guided discovery activities take into account the variety of learning styles that may be encountered, allowing the students to explore the museum or exhibit within a loose framework, and then coming together to share experiences and draw conclusions through interpreters' questions.

Trilevel questioning strategies, such as outlined in *Teach the Mind, Touch the Spirit*, (see below) enable the interpreter to use questions to guide the students to ever-increasing levels of cognitive awareness, beginning with simple acquisition of information through abstract thought. Using guided discovery activities with trilevel questioning strategies, the interpreter has a basic framework for developing programs that will enable children of all ages to have an inspirational and productive museum experience. According to *Teach the Mind, Touch the Spirit*, three levels of questioning are: (1) acquisition of information, (2) organization and processing of information, and (3) diverging from known information.

Acquisition of information can be accomplished even if your students cannot read or write. Students can obtain information by using their senses: seeing, touching, listening and, if possible, smelling and tasting. This base level involves gaining the basic facts: Who are these people? What are they doing? Where are they doing it?

Organizing and processing takes the information gathered to the next level. Students use reasoning skills to find relationships and connections. How is this similar to that? Would it be easy to use these objects every day? Is this something you would want to do? Find three things that are the same/different.

Diverging from known information allows the students to speculate, project, and be creative. What happens next in the photograph? How does the person in the photo feel about his/her job? What would it feel like to work with this object? Look at the person's face and tell me what they are thinking about. Pretending you are this person, write a journal entry of a paragraph or more. There are no absolute right or wrong *answers* during this creative process. It gives students a chance to mix their imagination and reasoning skills.

The following are examples of activities using the trilevel questioning technique explained above.

Activity #1: The Scavenger Hunt

How we do it in our museum:

In the Boott Cotton Mills Museum and the Working People Exhibit we use scavenger hunt booklets to guide small groups of students through the exhibits. (We usually divide a class of about 30 to 35 students into groups of 3 or 4.) Each booklet has 10 photographs of different stations in the museum, and each photograph has approximately 3 questions written below the photograph, which allow students to gather facts, process the information, and creatively speculate what it would be like to do the work depicted in the exhibit station. (Students must be able to read the questions.)

For example, the carding station has an industrial carding machine and hand cards with a pile of cotton. Both types of cards are used to straighten the cotton fibers to prepare them for spinning into yarn.

The students are instructed to try carding by hand and to observe what happens to the fibers. The fact collected is that the cotton fibers are all going the same way after they are carded.

The students are asked to feel the bristles of the hand card and does it remind them of anything? Most students compare the hand cards to a dog brush or hair brush. Dog brushes are used to clean excess debris from the dog. Hairbrushes are used to straighten and untangle your hair. These are appropriate comparisons to something with which the students are familiar. Then the students are asked to find the similarities between the hand card and the industrial card, finding the relationship between the industrial and pre-industrial tools used to do the same job.

Next the students are instructed to find a letter which tells the story of a mill worker who got her hand stuck in the card and lost her lower arm. From this information the students can speculate the dangers of working in a factory. When the students regroup, the class can discuss which they would prefer to use, the hand cards or the industrial card. When the information gathered from the 10 different stations is pooled the children can debate the pros and cons of the Industrial Revolution.

Variations

One page hand outs or activity sheets can be developed to guide students through the museum using the same trilevel questioning technique. (Students must be able to read the hand outs and the exhibit text.) The activity sheets should have a similar collection of fact collecting and thought provoking questions. For example:

Acquisition of information—List three words to describe your machine.

Organizing and processing information—Put the words listed below in order of production from a bale of cotton to a bolt of cloth. Spinning, Weaving, Drawing-In, Picking, Carding Cotton, __________, __________, __________, __________, __________, Cloth

Diverging from the known information—*Imagine:* The year is 1920 and you are a drawing-in person in the Boott Cotton Mills. Because of the technological advances the power looms are able to produce cloth faster. This means the warp beams are being used faster. Your overseer tells you that you must work faster to meet the demands from the weave room. *How do you feel about this?*

For the Workshop

Unfortunately we cannot bring the museum to the conference, so we will conduct the first session with photographs. We will show historic photographs and guide participants through the three levels of questions. (This, incidently, is a good way to conduct off-site programs as well.)

First, based on what you see in the photograph, write down as many facts as you can. What is this a photograph of? Who are people in the photograph, and what are they doing? How are they dressed? What type of home do they have?

Then process the information by comparing the photograph to things you are familiar with and to other photographs. How do they work? What kind of machines do they use? Do they look happy?

Finally to diverge and create conclusions and stories for the people in our photographs. Pretend you are one of the people in the photograph, tell me about yourself and your life. Write a journal entry describing a typical day or write a letter to your family back home telling about your new life in Lowell.

Activity #2: Poetry in the Museum/Park

You will need:

- 10 to 20 index cards per group (or paper cut to 3x5 size)
- Paper on which to record final poem
- One marker or pencil per group
- Photos, quotes, exhibits, artifacts, or video

Directions

This activity can be done as a large group (i.e., a whole class) concentrating on one photo, quote, or segment of a video, or you can break the class down into 4 or 5 groups and assign to them different photos, quotes, or video segments.

Choose a recorder for each group. This person will write the word on the cards as they are suggested by members of the group. Encourage each group member to contribute a minimum of two words. Ask the students to give a variety of words describing the source(s) they are examining. They should vary the parts of speech (using nouns, verbs, participles, adjectives, adverbs, etc.). You may want to encourage them to keep the five senses in mind.

After the students have about 10 words, they can lay them out on the floor or table and begin to arrange them to make a poem. (Older students could generate as many as 20 words.) When everyone agrees to the final version of the poem, the recorder will write the poem to present to the rest of the class.

Variations

If students were initially grouped by theme (e.g., Decision to Leave, The Journey Over, etc.), regroup students so that the new groups consist of a student from each thematic group. Each student coming to the new group should bring 2 cards from the original group. Students in this new group create a new poem that captures the entire immigrant experience, from the decision to leave to opportunities in America.

If the students work with a variety of sources, share their poems and have them try to match each poem to its source.

Have each small group react to the same source and then compare their poems.

Give one group's set of cards to a new group to compose a poem. Compare that group's poem with the original.

For the Workshop

The participants will be divided into groups of approximately 5 people. Each group will be given a set of quotations dealing with the immigration experience, focusing on one of five themes: Decision to Leave, The Journey Over, Strangers in a Strange Land, Preserving Culture, and Opportunities in America. They will be asked to each write 5 words describing their feelings or the feelings of the person quoted. Any part of speech is acceptable.

They will arrange their words to form a poem that will be written down on the large sheet of paper and shared with the larger group.

Each group will contribute 5 words to form a larger "group" poem that would be reflective of the entire immigrant experience.

Conclusion

Using this trilevel questioning technique is important to reach your students who learn in a variety of ways. Some students listen well, others need to see, and others need to touch before they can comprehend new information. Some students feel involved listening, while others must speak in order to participate. Some students are shy but very creative and express their knowledge and talents in writing or drawing.

Teachers who spend hours with their students on a daily basis have nine months to figure out the avenue their students best learn. Park rangers and museum educators usually have an hour or so. (When students come to LNHP for a TIHC program, they are here for about 3-1/2 to 4 hours.) As public educators, we do not have the luxury of time to figure out which method is best to use with individual students. Many teaching techniques and interpretive methods must be used to reach the varied learning channels of the students. The trilevel questioning technique described here is one method you can use to tune in many learning channels and therefore reach (hopefully all) your student visitors. Good luck!

THE LIGHT AT THE END OF THE TUNNEL!

Roxanne Farwell
Park Ranger, National Park Service
Golden Gate National Recreation Area
San Francisco, CA 94123

***ABSTRACT**: Using the Point Bonita lighthouse as a case study, the author presents a guide to surviving implementation of a major docent program. As staffing levels and budgets dwindle, it becomes increasingly important to plan docent programs wisely, build and use partnerships, and manage effectively.*

***KEYWORDS**: Partnerships, program management, volunteers, docents, program planning.*

Notes from My "Keeper's Log"

> ***December 11, 1992.*** "Checked condition of Point Bonita Trail. It's the third consecutive day of gales, high seas, and extreme tides. The wind still blows at about 50 miles per hour. The waves are huge, and I am thoroughly soaked by spray while on the trail 90 feet above sea level. Amazingly, there are no landslides."
>
> ***December 12, 1992.*** "Point Bonita Open House. Receive radio call from Docent Oppenheimer of a possible landslide. I check the area and confirm that massive amounts of basalt have fallen on the seaward side of the narrowest portion of the trail and tension cracks run across what remains. We clear the area of visitors and close the trail."

Thus ended the seven-year-old Point Bonita Lighthouse docent program, and thus closed one of the most dramatic, beautiful, and popular sites in the Marin Headlands. Reopening the lighthouse to the public would be a formidable task. Trail repairs would be expensive. The docent program, already impacted by diminishing support through depletion of staff and declining budgets, would be difficult to re-energize. Managing a crew of 36 docents working at an isolated site would require careful assessment of resource, program, and personnel needs, if we wanted to see the light at the end of the tunnel!

The Resource

The Point Bonita Lighthouse is both a significant historic resource and a functioning aid to navigation. The Point Bonita light began guiding ships in 1855, making it the third lighthouse established on the West Coast. In 1877, the second order Fresnel lens was relocated to the end of a narrow peninsula, so that frequent high fogs in the area would obscure the beam less often. Automated in 1980, the 141 year old Fresnel lens still aids vessels navigating the treacherous approach to the Golden Gate.

The Point Bonita Trail rests on a spine of basalt, jutting into the sea four-tenths of a mile, at an elevation of between 90 feet to 150 feet above sea level. The trail is composed of ancient sea floor that erupted at a midoceanic spreading center millions of years ago. While some of the basalt is resistant to weathering, other portions of the trail are prone to landslides. Several bridges are anchored over trail sections which have fallen away due to wave action or rain water infiltration.

The Program

Thirty-six lighthouse docents provide guided walks and roving interpretation along the lighthouse trail and on the ground floor of the lighthouse during weekend open houses and full moon evening tours. The Marin Headlands Volunteer Coordinator manages the program with the assistance of a full-time Lighthouse Intern. In addition to meeting the operational needs of the docents, the Coordinator and Intern conduct special request programs, handle media requests, serve as liaisons between the Park Service and Coast Guard, and design and conduct trainings for the docents and all environmental educators from Park Partners in the Headlands who incorporate the lighthouse in their field programs.

The Vision

Opening Point Bonita to the public required a shared vision by the U.S. Coast Guard, National Park Service, Golden Gate National Parks Association, Park Partners in the Headlands, and the Bay Area community. Our vision was to see the trail not only repaired and reopened, but to manage a professional, resource-centered docent program in a manner that didn't exhaust everyone involved. My journal notes of the project period reflect my familiarity with the careful "calendaring" which is necessary to program planning, but to my delight, the Point Bonita project also became a thrilling continuation of the past, as the drama and challenges of rebuilding a trail on the edge of the continent expressed themselves. The "Keeper's Log" tells the story!

More Notes

1993–1994. "A Coast Guard crew is working on a beautiful restoration of the Point Bonita lighthouse to its 1880's appearance. All paint is being removed, all metal supports of the lantern room are being sandblasted, the eagle's head gargoyles are being refurbished, and an historic catwalk around the outside of the lantern room is being reconstructed according to historic photos. All of this is happening without a firm Park Service commitment to an interpretive program."

January 1994. "A geotechnical firm has submitted a study of improvements necessary to provide safe public access to the lighthouse. The study includes a landslide history of the Point Bonita trail, and includes information about two slope failures that occurred during the same season as the one that closed the trail in 1992. Five schemes of improvements are described, with the long-lasting improvements (20 years or more) predictably costing a substantial sum of money."

February 1995. "During our division's site assessment meeting, I ask if we can consider re-opening Point Bonita to the public. The Coast Guard obviously is eager to showcase its restoration and we have a good number of former docents eager to return to the light! Our Parks Association representative at the meeting thinks that they would be able to start fund raising for the trail project soon. Division managers support my request to develop a new full-time internship (assistant docent program manager) to help reduce my direct oversight of the docent program. I receive a commitment of funds and housing for this internship. We start a series of meetings with Park staffs and the Coast Guard to consider all operational needs and trail project issues."

May and June 1995. "The Parks Association hires a new project manager whose first assignment is the Point Bonita Trail! The park's project review committee conditionally approves a plan for the installation of two plastic (!) bridges which will hopefully last 25 years. The trail engineers estimate that the project will take about 7 weeks to complete. Since the plan is to assemble the bridges off site and lower them on the repaired trail by helicopter (the tunnel is too narrow to bring the bridges through and the worksite too narrow and dangerous to build them on site), we need to consider the impacts on seabirds nesting nearby. We plan to have the docent program ready by February 1996."

July 1995. "The Park Association has asked to move up the start date for the trail construction project, to ensure that weather does not become an issue. I intensify my seabird nesting survey. The nesting season is lasting longer than usual. Jack hammering on the trail won't bother the birds, but the helicopters will."

August 1995. "We have meetings to finalize the helicopter operations. As it turns out, the Marines will not be participating as planned, but Coast Guard personnel will bring the bridges to the trail. Once trail repairs begin only contractors will be allowed access to the trail, because of the hazards involved. Contractors have installed large eye bolts into the adjacent cliffs in order to anchor themselves with ropes as they perform some of the trail work. I conduct one last nesting bird survey before the trail is closed to me. I estimate that virtually all young will have fledged by the time we're ready for the helicopters. We agree to double the docent training commitment to four days and set aside the Saturdays in January. I notify the Coast Guard of our upcoming evening programs and training dates."

September 1995. "Trail contractors are ready for the bridges. September 28 is the fly date. We issue a press release for media interested in the event. Flying conditions are perfect: no fog and mild wind. The Coast Guard uses its largest helicopter to sling first the 35-foot, then the 70-foot bridge to the work site. Each bridge is lowered onto the trail seemingly without effort. The bridges are swiftly attached to their footings and we have the opportunity to take an exciting walk out to the lighthouse, crossing the new bridges which are yet to have their wood floors installed! There is quite a lot of air between the bracings! February 3 is finalized as our opening day and former lighthouse docents are contacted to see who has been patiently waiting to return!"

October and November 1995. "Now I'm immersed in the nuts and bolts of program preparation. We offer full moon tours of the lighthouse for trail donors, former docents, and Park staff. I prepare mailings advertising the call for docents and the new Assistant Lighthouse Docent Manager internship. We offer a special ribbon-cutting ceremony for all who enabled us to repair and re-open the trail. The Parks Association issues a Public Service Announcement to assist with the recruit for new docents. I establish December 1 as the deadline to hear from former docents and prepare the basic agenda for the docent training. By the end of November, I hire my new assistant, Lars Kvale, from Denmark."

December 1995. "More full moon tours (in spite of cool weather, the public is very eager to attend these special programs). Lars prepares training handouts for an estimated class of 55 participants. Commitments from all guest speakers are secured. I interview and hire new docents—fortunately, I did this early in the month. On December 11 the Bay Area was assaulted by a violent winter storm. The park is closed for nearly a week while crews work around the clock to repair buildings and clear roads of fallen trees. I check the new plastic bridges on the Point Bonita Trail. I recall the project manager confidently stating that these bridges were rated to withstand winds up to 85 mph. This storm produced gales of 105 mph at Point Bonita! Thank goodness, the bridges look fine! We are ready to open the Park and get back to work on the 16th. Unfortunately, it's the beginning of a three week furlough!"

January 1996. "The continued furlough forces us to delay training one week. Lars and I juggle the training agenda and reconcile any scheduling problems. Three weeks of work are crammed into four days in order for us to meet our new training schedule. The furlough costs us a few applicants, but I'm still able to hire 36 docents. One of our long-time docents is interviewed by a local travel magazine television show. The show is very popular. Our Visitor Center phones are ringing off the hook!"

February 1996. "Finally, we open the lighthouse to the public again! Opening Day is rainy—the scenery is dramatic but visitation is moderate (a happy circumstance since nearly all of our docents are still completing their fourth training day). The local newspaper highlights the newly-opened lighthouse on Sunday, February 4, resulting in the largest crowds ever experienced at Point Bonita. Thanks to all who helped us bring the light back to the public!"

Epilogue

In looking over my notes from the Point Bonita project, it appears that I was blessed by a number of lucky events. But the real success of the project occurred before the trail failure of 1992. I already was considering ways that this complex program could be changed to prevent our staff from being consumed by a lighthouse. The trail closure provided us with the opportunity to visualize program alternatives. While the Coast Guard worked at restoring the lighthouse, I worked at imagining an ideal program, given our staffing constraints.

My visualization included all aspects of the program. In imagining a typical open house at Point Bonita, I considered the material and logistical needs of the docents. Imagining a walk along the trail entailed a consideration of all the partner agencies and groups involved with Point Bonita. Visualizing a docent-led tour caused me to consider the training needed to facilitate professional resource interpretation. Visualizing an emergency situation on the trail led to formulation of EMS protocols. Visualizing my co-workers at the Visitor Center led me to think of new ways of managing the time-consuming chore of docent scheduling.

As a result of my experiences with the Point Bonita program, I believe that seeing the light at the end of tunnel requires conceptualizing it before you enter!

MISSION-RESPONSIVE SITE AND BUILDING DESIGN

Paul B. Anderson, Director, Environmental Education Studio
Laurence Page, Principal, Environmental Education Studio
Sirny Architects
333 Washington Avenue, Suite 100
Minneapolis, MN 55401

ABSTRACT: *The session will be a presentation and discuss of methods and techniques used to ensure that the design of site and building facilities reach their full potential in supporting an organization's mission.*

KEYWORDS: *Mission-responsive site, building design.*

Introduction
The approach taken in the design of sites and facilities is critical to the success of the organizations they serve. Not only are there operational issues which affect the daily functioning of the facility, but there are equally important issues of environmental appropriateness and impact which cast light on the organization's commitment to sustainability and environmental awareness. Sirny Architects' Environmental Education Studio has considerable experience with environmental education not only in the design of many facilities, but also in the governance of environmental education and interpretive centers. The content for this session is gleaned from these experiences, and is intended to serve as a point of reference for groups as they organize, plan, acquire land, design, and ultimately build and operate centers for the study of the natural world. The material is not intended to be an exhaustive list of issues in full detail, but rather a checklist for ideas to be discussed and incorporated into the building of a team which will likely include various civic and environmental organizations, a director and governing board, a widely varying staff, and design professionals.

A design firm's approach should be:

- Mission responsive
- Site specific
- Operations specific
- Team oriented
- Based in experience

Mission Responsive
All design decisions must be tested against the organization's mission:

- Before any design work begins, the design firm must *start by listening* and not presume to know the solution.

- The design team must understand that building and site development are important tools for the delivery of environmental education.

- Ecologically sustainable design is consistent with the organization's mission, is an excellent teaching tool, and must be part of the culture of the design firm's office (see Figure 1).

Site Specific
- Experience with environmental learning centers demonstrates that although the space needs of different organizations may be similar, individual solutions are very different based on site and surrounding areas.

- The design team should camp on site for several days to better understand the subtleties of the site and community.

- Design from the outside in, responding to the context and continually narrowing focus.

- Buildings must be appropriate to, and reflective of, their area (see Figure 2).

Operations Specific
- An understanding of, and experience with, key operational components: environmental educational delivery, interpretive exhibits, administration, food service, housing.

- As inefficiencies of staff and equipment will affect an organization for the life of its building, the design firm must be committed to seeking the right match of the building to an organization's operations.

- Ability to tailor building construction and mechanical systems to local service technicians to minimize maintenance expense.

Team Oriented
- Experience and commitment to consensus building by facilitating the pursuit of common ground between various agencies and points of view.

- Experience in conducting town meetings to develop community awareness and enthusiasm.

- A recognition that an organization's representatives provide the mission, goals, and objectives for the project, and the design team's charter is to translate these directions into building and site development.

- A commitment to the success of environmental education not only as designers and engineers but also as residents of a common environment.

Based in Experience

A design team's experience with environmental education can offer the following benefits to an organization.

- Familiarity with the programmatic components related to environmental education facilities, which may include: environmental education delivery, interpretive displays/exhibits, administration, food service, housing.

- A thorough understanding of vehicular and pedestrian traffic safety issues.

- Direct experience dealing with regulations related to wetlands and other protected natural environments.

- Experience with complex clients comprised of nonprofit organizations, local, state and federal agencies including Department of Natural Resources, watershed districts, U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, National Park Service, and U.S. Forest Service.

- Expertise in historic renovation, including resources to evaluate, document, research and implement historically sensitive design work.

- Knowledge of precedents and ability to present alternatives to related issues relevant to the project.

- Understanding of the importance of community involvement and the ability to build consensus and ownership.

- Experience in governance of environmental education facilities.

- Environmental awareness should be part of the personal avocations and working culture of the design team.

- Experience not only with incorporating ecologically sustainable design principles but featuring them through interpretive educational exhibits.

- Experience with a number of environmental education organizations which generates an exchange of ideas while maintaining a unique solution through an organization's site, mission, and leadership.

- In addition to designing facilities which focus on our natural heritage, experience in projects focused on preserving architectural and cultural heritage.

- Ability to provide updated information on a Web site, so that members of committees and the community can access current information about the progress of the work. This Web site address can also be used by the organization in its continuing fund-raising efforts.

Summary

All of these considerations enable an organization to spend more of its design fees on design and less on the learning curve. Choosing a design team which has familiarity with and sensitivity to these issues will greatly enhance the opportunity for long-term success of a project.

The following are crucial considerations for any facility but especially for environmental education facilities:

- All decisions should be tested against the organization's *mission,* to ensure that resources are best directed at achieving its goals.

- The *site* is often the most important teaching venue and should be respected and deferred to by built structures.

- Decisions made about the daily *operations* of the facility will affect its livelihood throughout its future.

- The entire *team* of governmental agencies, environmental and charitable organizations, staff, governing bodies, and design professionals must be integrated and directed at its common purpose.

- The team must draw from the collective *experience* of everyone involved, seeking ideas and suggestions from a broad and diverse group from within the local and environmental education communities.

Figure 2 demonstrates a rating process used by an environmental education center to outline criteria for the sensitive and appropriate selection of a building site. While this criteria will vary depending on overall sites, the process is helpful in sorting out and discussing relevant issues.

Figure 1 summarizes some issues to be considered in the design of buildings, once a program and site have been established. There are many others not included; the list is aimed at a building solution which is sensitive to its natural surroundings and the people who will educate and be educated there.

Figure 1. Sustainable Architecture

- Environmentally ethical decision making in architecture is part of a total commitment to responsible stewardship in society.
- Sustainable architecture is a pervasive attitude which should be applied to all phases of the design process, even though its applications are often not visible in the building. Failure to incorporate these principles, however, may contribute to very visible side effects elsewhere: clear-cut old-growth forests, polluted water, strip mining, polluted air, skin cancer, and dredged river bottoms.
- In the United States, the building industry contributes greatly to ozone depletion by CFCs, carbon dioxide emissions, municipal solid waste, annual energy consumption, and vast quantities of natural resource consumption. Therefore, architects and owners have a responsibility and duty to the environmental health of our society to produce environmentally ethical design.
- In the design of buildings, the terms *sustainable* and *architecture* should be *synonymous*. Environmentally appropriate design must be pervasive, just as are other design issues such as life safety, functional relationships, scale, context, color, proportion, budget, and technical considerations. Sustainable design also presents the unique opportunity to use architecture as a teaching tool, symbolizing environmentally ethical decision making.
- The following represents a partial list of strategies that should be considered in the design of facilities to mitigate their environmental impact:

General Design Considerations
- Create a strongly integrated indoor/outdoor relationship that will foster a connection between the user and nature.
- Locate the building appropriately on the site to minimize its impact.
- Incorporate flexibility in planning to enable space to be used to its full potential through multiuse and to facilitate future retrofitting.
- Strive for timeless design to minimize future change.
- Retrofit, remodel, and renovate existing structures whenever feasible.
- Incorporate efficient space planning to minimize size.
- Investigate alternatives to new construction, including use of existing buildings both on and off site, temporary/movable structures, and moving existing structures.

Indoor Air Quality
- Use materials without high volatile organic compound (VOC) outgassing.

Energy Considerations
- Minimize use of processes that consume fossil fuels.
- Use low-maintenance and durable materials.
- Use materials with low embodied energy (energy used during material extraction, refinement, manufacture, transportation and installation).
- Use natural daylighting.
- Maximize life-cycle energy conservation measures.
- Maximize insulation.
- Use high thermal performance operable windows.
- Use insulated window treatments.
- Use energy management systems.
- Use natural ventilation systems.
- Use passive solar energy.

Global Concerns
- Use materials that do not adversely affect the biodiversity of the planet, including rainforest wood species verifiably harvested from managed, sustainable forests, or wood species not harvested from old-growth forests.
- Use sustainable materials such as wood.
- Use materials that do not contain CFCs.
- Use salvaged materials, thereby saving energy and reducing pollution from resource extraction, processing, and manufacture.
- Use recycled materials.
- Use materials designed to be easily recycled.
- Plant trees to offset the project-associated carbon dioxide emissions and wood used in construction.
- Use building systems and construction processes that minimize consumption of water, such as composting or low-flow toilets, and gray water recycling.

Figure 2

Site Rating Chart

The following rating system was used for site selection analysis by the Agassiz Environmental Learning Center, and rates six sites relative to issues deemed important. The resulting highest score gives a clear indication of a preferred site as it satisfies relevant criteria.

Issues		Weight Factor	Site 1	Site 3	Site 4	Site 5	Site 6
			A	**C**	**D**	**E**	**F**
1	Centralize building relative to outdoor program areas	3	9	9	3	3	3
2	Minimize visibility of building/parking from outdoor program areas/trails.	2	8	8	8	8	8
3	Minimize visibility of vehicular circulation from outdoor program areas/trails.	2	8	8	10	10	10
4	Minimize length of entrance drive	1	5	5	5	5	5
5	Minimize visibility of off-site buildings from new building.	2	10	10	4	4	6
6	Maximize views of nature from new building	1	5	5	3	3	5
7**	Adequate drainage	1	5	5	5	5	5
8**	Adequate soil bearing	1	5	5	5	5	5
9	Maximize opportunities for natural ventilation	1	4	3	5	4	1
10	Maximize opportunities for passive solar heating	1	5	3	5	5	2
11	Adequate utility availability	1	5	5	1	1	3
12**	Adequate Percolation	1	5	5	5	5	5
13	Minimize impact on existing plant and animal communities	3	15	3	15	15	6
	Total		**89**	**74**	**74**	**73**	**64**

Scale 1---------------5
Poor Excellent

* The value shown is the product of the value (scale 1-5) multiplied by the weight factor.

**It is assumed that sand and gravel soils predominate and provide excellent drainage, bearing and percolation. Verification by a certified testing firm is required.

PARTNERING WITH YOUR NEIGHBORS FOR EFFECTIVE INTERPRETIVE PROGRAMS

Mary Tagliareni
Research and Training Specialist
Florida Keys National Marine Sanctuary
P.O. Box 1083
Key Largo, FL 33037

ABSTRACT: The Florida Keys National Marine Sanctuary builds partnerships with volunteers, businesses, the community, and other agencies to create effective and innovative interpretive programs in the Florida Keys. We are providing suggestions from our experiences for identifying potential partners and building relationships.

***KEYWORDS**: Partnerships, community based, volunteers.*

Introduction

In November 1990, the Florida Keys National Marine Sanctuary (FKNMS) was designated encompassing 2,800 square nautical miles of the south Florida ecosystem. On-site management of the FKNMS is achieved through a cooperative agreement with the State of Florida Department of Environmental Protection and the U.S. Department of Commerce's National Oceanic and Atmospheric Administration. When the FKNMS was designated, there already existed county, state, and federal management plans within and adjacent to the FKNMS. Also, within the boundaries there was a community with a population of 60,000 and an economy supported by commercial fishing and six million visitors. Within the education department, developing partnerships with our neighbors has allowed us to produce better products and programs with limited budgets and staffing.

Benefits of Partnering

Partnering is a winning situation for many reasons. It spreads the amount of work and costs among different players without taxing any one resource base. In today's government with budget and staffing cutbacks and the outcry against government waste, supervisors, managers, and agency heads applaud their people who work with others on interpretive programs. The public appreciates the cooperative efforts, too. By bringing others into a project you also bring their expertise, imagination, and experiences. It provides the opportunity to share and learn from each others mistakes and triumphs. It also prevents unnecessary duplication of products and programs and allows you to recognize where there are deficiencies that need to be addressed. When working together on shared resource issues, it promotes the communication of common messages to the public from different agencies. Partnering also promotes ecosystem management and a holistic approach to resource protection. Successful partnerships often foster networking opportunities for expansion to other participants.

Case Samples

"Lobster Season Program"

Every year in Monroe County, Florida (Florida Keys), the annual lobster season brings a confusing set of regulations. They include two different recreational seasons, different state and federal regulations, closed areas, and regulations unique to this one county. Someone wanting to participate in the harvest would need to obtain at least four different publications containing the different laws and regulations. For the past five years, the Florida Keys National Marine Sanctuary has brought together state, federal agencies, and local businesses to help solve some of the communication problems and better protect the resource.

A special "Monroe County Sport Lobster Information" brochure combining all the regulations has been printed. The regulating agencies provide the current laws, peer review it before printing, and assist with the printing costs. Additional funding has been obtained from a local SCUBA dive club looking to donate to a worthy environmental cause. Staff and volunteers distribute the brochures to marinas, hotels, and dive shops to better reach the fishers.

During the week preceding the sport lobster season, an information booth is staffed 8 a.m.–8 p.m. at Key Largo Chamber of Commerce. This allows people coming from outside the county to obtain correct information on regulations, proper equipment, and harvesting techniques. Agencies assign staff for short periods of time to operate the booth, not putting excessive hardship on any one agency.

The outreach effort is also shared among the agencies. Staff from the FKNMS and Everglades National Park write and record radio public pervice announcements, the Florida Marine Patrol's Public Outreach Officer appears on local radio talk shows, and the FKNMS includes sport lobster season on the weekly television show "Waterways."

Five years ago, this project started with the FKNMS developing and funding 2000 brochures. In 1996, it increased to 20,000 brochures with a maximum contribution of $500 from any one agency. Participating agencies in 1996 are FKNMS, Florida Marine Patrol, National Marine Fisheries, Biscayne National Park, Florida Highway Patrol Auxiliary, Florida Park Service, Florida Marine Patrol Auxiliary, Key Largo Chamber of Commerce, Monroe County Sheriff's Department, and several local tourist businesses.

"Florida Bay Dude"

This project is a video and Educator's Guide teaching about ecosystems and exploring issues surrounding "ecosystem restoration" in south Florida. Since the target audience was eighth and ninth graders, the local school district, teachers, and students were brought together to help develop and produce the video. The students wrote, acted, and filmed the video while a production company donated edit studio time for post production work. The Educator's Guide was a collaboration of environmental agencies, teachers, and scientists. The 500 copies of the video and the guide were funded by civic organizations, environmental groups, state and federal agencies, and local private businesses.

Partnering allowed this project to be expanded from a video to include the Educator's Guide. A good project became a great project with a little help from everyone.

"Waterways"

Waterways is a weekly television show about the people who live, work, and play in the Florida Keys aired throughout South Florida. The producer and host is a member of the FKNMS staff. Funding is provided by Everglades National Park, FKNMS, and the Environmental Protection Agency. Due to the high cost of producing a television show this project is possible only by partnerships. It benefits all agencies involved by presenting various aspects of their program.

"Team OCEAN"

Team OCEAN is an on-water education and information service that protects FKNMS resources while enriching the experience of visitors to the Florida Keys. Trained volunteer teams using FKNMS vessels are stationed at heavily visited reef sites during the peak recreational boating season to educate and inform the public about the FKNMS program, proper use of FKNMS resources, and basic safety precautions. This program is possible through the partnerships built with the community, volunteers, and a nonprofit organization.

Steps to Partnering

The first step is to know who your neighbors are—do some research. Ask yourself some of these questions when looking for possible partners:

- With whom is your habitat or ecosystem interconnected?
- Does any other agency have regulations within your area?
- Are there nonprofit organizations (big or small) in the area?
- Are there other groups doing educational or interpretive programs in the area?
- What businesses benefit from your site?
- Are there local civic organizations?
- Are there school districts or universities?
- Is there a chamber of commerce?

Once you have answered these questions, seek out and meet your neighbors. Either go to their site, meetings, or offices or invite them to yours. The following are questions you will want answered by the different groups. Be prepared to answer these same questions about yourself for them:

- How long have they been around?
- What are their resource, educational, management goals?
- What resources do they have (staff, equipment, facilities)?
- What projects or programs have they done in the past?
- What projects or programs are they currently working on?
- What are some of the major issues they are facing?
- Are there any new projects they are considering?

Take notes, gather samples of their work, and maintain contact with them. Having a name and face to put with an agency or organization will make it easier to approach them later with an idea. The more they know about you, the more likely they will be to come to you when they are looking for partners.

Now that you have developed a list of potential partners, the next steps come when you have a specific project, idea, or issue. Identify possible partners who may be interested or whom you may want to work with. Do not limit yourself when doing this evaluation. You may be surprised at who responds. A good first step is to present the idea to someone on your staff and gauge the feedback. If you receive a positive response, set up a brainstorming session among potential partners. Begin the brainstorming with your broad goals and outcomes on the project and then be open-minded to any and all other ideas. It will take good communication skills both verbal and written to develop and complete a project.

As the project progresses from a brainstorming stage to a development stage, it may be necessary to put in writing:

- A realistic timeline
- Who is doing what (who is responsible)

- A proposed budget
- A description of proposed project(s)

Reminders
Once you have partners on a project, there are things to keep in mind to avoid major setbacks and problems. Everything will take longer, from peer reviews to securing funds. The more people who are involved the more schedules you will have to work around. Every agency has different purchasing procedures taking varying amounts of time—ask your partners for realistic time frames. Satisfying the needs and expectations of the different partners can be a challenge. Open lines of communication can prevent many misunderstandings.

Conclusion
By pooling all resources from different organizations and the community, it has been possible for the FKNMS to reach a greater number of visitors.

THE PROCESS OF INTERPRETATION: FULFILLING THE MISSION THROUGH INTERPRETIVE COMPETENCIES

David B. Dahlen, David Larsen,
Sandy Weber, and Robert Fudge
National Park Service
P.O. Box 77
Harpers Ferry, WV 25425

ABSTRACT: *This series of sessions will introduce participants to the new competency-based approach which the NPS is taking to foster interpretive excellence. Through several related sessions we will take an innovative look at the interpretive process; how interpretation works; and how the interpreter creates an opportunity for the audience to attach value or meaning to the resource. These sessions are open to all who ponder the "how and why" of what we do. This series also serves the curriculum requirements for NPS interpreters.*

KEYWORDS: *Competencies, certification, interpretive equation, interpretive opportunity.*

The Process

Old saws lament, "The more things change, the more they stay the same." A new spin on the adage might be, "The more things stay the same, the more opportunity arises to change." Both armchair observations are true of the interpretive philosophy captured in the new NPS Interpretive Development Program. New and old are cornerstones of this new approach. Laced throughout are hints of Tilden, shadows of Muir, furtive glimpses of Mills, and others. New twists and turns and ways to think about our profession are evident. Look closely and you will see the past, the present, and the future all wrapped into one exciting idea.

Just the Facts

The NPS interpretive training and development program has been completely overhauled to meet agency mandates and create a more effective process for developing interpretive excellence. Grounded in the Ranger Careers Initiative, the Interpretive Development Program identifies 11 essential "competencies" for park rangers to attain as they progress through the entry, developmental, and full-performance levels. The Interpretive Development Program will provide clear developmental pathways for park rangers and their supervisors, and for the first time apply national standards for measuring interpretive effectiveness in each competency area. Central to this approach is to recognize that (a) the competencies are made up of a wide range of knowledge, skill, and ability, and (b) demonstrating competency is the goal. It is not just attending a training course with no assurance of learning.

The Competencies

Entry level (GS-5): Prepare and present an effective interpretive talk; demonstrate effective informal interpretation; identify and describe visitor needs and characteristics.

Developmental level (GS-7): Effective interpretive writing; conducted activities; develop and present effective education programs; demonstrations and other illustrated programs.

Full-performance level (GS-9): Interpretive media; interpretive planning; partners in interpretation; basics of interpretive coaching and peer counseling.

Serving the Mission

Every organization which uses the art of interpretation has a purpose or mission for its existence. That mission is at the same time self-serving and noble. The preservation of systems, objects, legacies, and interwoven fabric of culture often depends on the survival of those institutions which are entrusted with their care. Interpreters must capture the spirit of their organization while not allowing the mechanics of its operation to impede their larger role of bringing the story of their resources to life. No small task. Without a clear focus or professional foundation the weight of bureaucracy and its machinations can become an impediment to this goal.

Likewise, recognizing that audiences individually and as groups fall on a continuum of need and/or interest—from basic orientation through inspired revelation—is essential for all interpreters. Selecting the proper interpretive approach requires sensitivity, empathy, perception, skill, knowledge, and ability in a wide range of areas. A visitor may only need directions, might ask the name of an historic object, or wish for details on a complex geological process. When asked by management or administrative personnel what interpretation can offer to support operations, a knowledge of the range of options and their potential to affect audience stewardship of the resource is vital in deciding on a course of action. In effect, the interpreter can quantify what she/he can "bring to the table," so that informed, effective decisions on allocation of personnel and effort can be made.

Every professional decision which an interpreter makes, from novice to master, should be based on sound personal and professional beliefs about the importance of interpretation meeting the needs of both the audience and the resource. With that, every decision made may have a direct affect on the stewardship of those resources. Without a personal and professional grounding in audience, resource, and techniques, an interpreter will never be able to answer, when asked, "Why should we do interpretation?"

Connecting Tangibles to the Intangible

To understand why we do interpretation is to explore the core concepts or values we as organizations, and as individuals, hold. It is such a personal study wherein the answers often become blurred in complexities of philosophy. It follows that with such passion and motivation at the core of our beliefs, consensus between interpreters, or even relative consistency in answering that question is a challenge. It is equally true of those who hear the stories we tell. The knowledge, bias, culture, education, and life experiences our visitors bring are the filters which they use to connect with the resources. Each visitor should have a personal interpretive experience. The pieces form an equation which is dynamic, not linear. The challenge is to find connections between tangible resources, such as artifacts, trees, structures, vistas, and stories, and intangible ideas which lie within those resources. The portal to larger significance lies in the intangible meanings and significance which the resource holds, and connections between those intangibles and each audience member. Without connecting meaning or value to the resource, the visitor will not deem it worthy of preservation, let alone explanation. The visitor makes the connection; the interpreter creates the opportunity.

Universal Concepts

There are often intangible ideas embodied within our resources which connect far beyond the simple intangibles. The Liberty Bell comes to mind. When most visitors view the bell, they make personal connections to intangible ideas such as a lifestyle, freedom of expression, freedom from oppression, their ancestors, or when they gained their personal freedom through emigration. Connections such as these, are concepts which transcend many cultures, educational backgrounds, biases, and are common to many. These are universal concepts. Through interpretive efforts, using the tangible to connect to intangible concepts fosters a greater appreciation within visitors. At its best it serves as a catalyst to create an opportunity for the audience to form their own intellectual and emotional connections with the meanings and significance inherent in the resource.

The Interpretive Equation

Making this philosophy work is a challenging task. Every audience is different. Every topic has its own information/factual demands. Every site has environmental factors, issues, time constraints. Every supervisor has a SOP to follow. The dynamics can be daunting. A strategy for maintaining consistency in your efforts is essential!
In our haste to develop effective delivery habits such as diction, volume, eye contact and all the rest, we can overlook or short-change underlying tenets of interpretation. Knowing all there is to know about a resource is more than just knowing the *facts* about that resource. Interpreters must identify and be fully aware of the many tangible, intangible, and universal concepts the resources represent to various audiences. Interpreters must possess a broad knowledge of the history of the site beyond its "official truth." They must know how past and contemporary issues relate. Interpreters should not use their knowledge of the resources and the intangible/universal meanings associated with them to offer only bland recitals of non-controversial ideas. Interpreters must embrace a discussion of human values, conflict, tragedies, and multiple points of view. Interpreters must not presume to expound what they think is the only "true" version of the resources and their meanings, but embrace the notion that differing views of the same subject exist and can become exciting interpretive openings.

Interpreters must reach out for all audiences, more than just those who actually visit a site. Not all visitors require an intense interpretive experience, and we must recognize and respect the specific personal values and interests visitors associate with the resources. Visitors have the right to have their privacy respected, to retain their own values, to be treated courteously, and receive accurate information. In addition, interpreters must recognize that the motivation for each visitor is different, and that to be successful the interpreter should strive to forge compelling linkages between that visitor and the resource, regardless of the visitor's motivation, or their version of the "truth." Only through this careful balance will opportunities for stewardship be realized. Whether the visitor merely is seeking directions, or is ready to forge a lasting stewardship with the resource, it is the interpreter's job to ensure that visitors have a positive experience, and allow them to gain a higher level of understanding whenever possible.

In addition to knowing the resource and the audience, selecting the proper delivery technique is an important piece of the interpretive equation. The interpreter should never choose a technique without first identifying the theme, goals, and objectives and the prospective audience for the talk in order to determine if a delivery method is an appropriate "fit." All of the professional skill in communication which the interpreter can add must be present to maximize effectiveness. Once a technique is chosen, it should periodically be checked for compatibility with the message and outcomes desired.

The interpreter has an obligation beyond skill in delivery techniques. The interpreter must maintain the highest possible knowledge base, and use that knowledge in an appropriate vehicle based on professional judgment, not personal preference. At all times the interpreter must maintain a professional appearance and manner. This is especially important when discussing resources which have multiple intangible values, or working with visitors who approach and understand those resources from other perspectives. Within each office or organization, the interpreter participates in site management by integrating programs into operations, participating in other in-house efforts, and soliciting ways which interpretive efforts can contribute to overall team success. With a firm grounding in the contributions which interpretive efforts can make to the visitor experience, stewardship of the resource, and in support of other programs and efforts, an informed interpreter can answer the question, "Why do you do interpretation?", in both quantitative and qualitative terms.

Applying the Equation to the Real World

To be grounded in reality, any discussion of interpretive philosophy and approach needs to put the "rubber on the road". When studying a resource, learn the many "truths" which are associated with that resource. The truth of the Crow Indian is not necessarily the same as the truth of a Seventh Cavalry descendent. The truth of a geologic report about the Grand Canyon is not the same as that of a Hopi. This awareness will broaden your foundation and will help you maintain confidence and composure when presented with an alternate "truth" in the midst of a program. In addition, your objectivity in acknowledging differing points of view will reinforce your credibility throughout your group, including the "protagonist!"

Be honest! Don't sensationalize your story. Don't tell an audience your resource is important, let them decide for themselves once they've heard what you have to say. We've all heard one too many times that a site is the "biggest," or "widest," or "oldest," or "most important." Allow the visitors the opportunity to decide.

Remember that your audience is motivated to come to your site for countless reasons. What they are looking for could be mapped on a scale from the ridiculous to the sublime. If you become adept at locating the audience on such a scale, you will be able to meet and/or exceed their needs more effectively, ultimately leading to increased stewardship and protection.

One Final Element

Just as interpretation is a never-ending journey for the visitor, it is a constant voyage of discovery for you, the interpreter. Interpretation is a process. You must constantly evaluate yourself as well as your techniques and programs. Always keep in mind Tilden's admonition that "Interpretation is a voyage of discovery in the field of human emotions and intellectual growth, and it is hard to foresee that time when the interpreter can confidently say, 'Now we are wholly adequate to our task.'"

SUCCESSFUL MANAGEMENT OF SPECIAL EVENTS

Retha W. Stephens
Park Ranger
National Park Service
Kennesaw Mountain National Battlefield Park
900 Kennesaw Mountain Drive
Kennesaw, GA 30152

ABSTRACT: *What does it really take to have a successful special-event tour site? In the interest of introducing interpreters to this kind of activity, this session will offer an overview as well as specific suggestions.*

KEYWORDS: *Preparation, money, volunteers, fun.*

Introduction

After several years of managing several different kinds of special events at Kennesaw Mountain, I felt I might have something useful to share with my peers at NAI. I do not claim to be an expert, but I do feel I have learned a few things along the way. I encourage anyone who has had good or bad special event experiences to join us so we can get a good discussion going and learn from each other.

General

Most interpreters will be called upon at some point in their career to manage or assist with a special event at their site. This is an opportunity for your site to "shine." It is also an opportunity to reach people you have never reached before. You certainly do not want to "mess up." Come and learn a few tips which may make your life a little easier when you are called upon for such a task. We will discuss types of events, financing, use of volunteers, publicity, food service, entertainment, and postevent follow-up. A big special event can be somewhat daunting, but it does not have to be—if you are prepared. Depending upon the size of the event, there will always be hard work and preparation involved. But it really can be fun, too.

References

Devney, Darcy Campion. 1990. *Organizing Special Events and Conferences.* 1st ed. Sarasota, Florida: Pineapple Press.

National Parks and Conservation Association: *Walk for the Earth, March for Parks: An Earth Day Event. A Step-by-Step Guidebook for March Partners.* Washington, D.C.

TRAINING TEENAGE VOLUNTEER INTERPRETERS

Connie Loosli
Education Specialist
Lindsay Wildlife Museum
Walnut Creek, CA 94596

ABSTRACT: *Teenagers can be a valuable source of volunteers. But how do you recruit, screen, train, and inspire this unique group to become an integral part of your organization? The 12- to 18-year-old age group is not always easy to work with, but with careful planning they can turn into your most dedicated group of workers.*

KEYWORDS: *Teenagers, volunteers, interpreters, training, recruiting, supervising, motivating*

Introduction

In 1985, The Lindsay Wildlife Museum staff decided that their volunteers needed more organization and more support from staff members, so they divided their adult volunteers into "teams" with staff supervisors. There were a small number of youth working at the museum and other youth who wanted to volunteer so the decision was made to form this group into a team of their own with their own duties and supervision.

This group, made up of 12- to 16-year-old youth, is called Interpretive Guides, or "IGs," and has had a 300% increase in the program since 1992. In 1996, we accepted 65 young people and we are still turning down many more than we can accept. It has now expanded to include a second group of 16- to 18-year-olds, "graduated" from the group known as Senior Guides. These young volunteers come to the museum from many surrounding communities, and must pay to join the museum and be part of the group, as well as commit themselves to one shift per week plus extra events for a year at a time. New Interpretive Guides are accepted only once each year to replace those leaving or turning 16. In this time of concern over the lack of direction in our youth, such as gangs, violence, and lack of responsibility, these kids are a great example of dedication.

Recruiting is done through our usual members' publications as well as the local newspapers. Notification is also given to the local schools where principals and teachers sometimes recommend students. Word-of-mouth is the best recruiting tool and the IGs themselves often find that they are asked about the program when they are working in the museum. We have never found ourselves needing more recruiting techniques for general applicants. Targeting certain types of youth or certain areas can be effective also.

The selection process for these teenagers begins with a written application. The questions are fairly general and tend to give the supervisor an idea of why the youth is interested in the program in the first place. However, in an effort to keep diversity in the program and to find youth with enthusiasm and commitment, interviews are granted to selected applicants. The ideal group of IGs includes applicants from several communities, an even mix of boys and girls, and a selection of youth interested in community service as well as learning new skills. Scholarships are available through a special fund.

Training is mandatory and requires two partial Saturdays before they are given their name badges, T-shirt "uniforms," and shift schedules. It is important that the training include group activities to help with socialization, as well as skill training specific to the duties to be performed. Using ongoing Interpretive Guides and Sr. Guides as trainers gives them a sense of ownership in the program and helps them take responsibility for the new group members. This also helps to refresh the rules and procedures in the minds of these continuing members. The training needs to be fun, informative, and primarily "hands-on" experiences. The initial training cannot be expected to cover everything. It must be supplemented with some kind of monthly or bimonthly trainings as well as some kind of pairing up of new interpreters with experienced ones for the first few weeks of duties. At the museum, these young volunteers are trained in handling and interpreting some of the wild and domestic animals, giving presentations in the Exhibit Hall, small group tours, handling children's activities, and helping at special events such as birthday parties.

Supervision of the teenagers on the job is perhaps the most difficult part of the program. Most young people need specific schedules and duties which are varied but routine. Some type of rotation system often helps keep the IGs moving from job to job. Small breaks are necessary but must be kept to a minimum. Because the program encourages bonding between members of the group, socializing can be expected. However, learning when and where to gather and socialize is an important part of youth supervision and training. It is important for these volunteers to have a sense of ownership of their own program, so seeking their input for the solution to problems is a key element of successful supervision. For these teenage volunteers to have a sense of responsible stewardship toward the environment or their community, they need to be empowered. This is accomplished by positive motivation, not by excessive rules or threats, etc. Trust and cooperation must be developed within the program in order to help the youth volunteer to want to do the best job possible.

Evaluating these volunteers can be done through a combination of self evaluation forms filled out by the volunteer and a year-end interview with the supervisor. Self-evaluation tends to reveal how the youth feels about his own performance and whether or not he/she will continue for another year. It also can be very important in the structuring of the program for the next year. Some type of point system including attendance, promptness, extra events, and special trainings attended help the supervisor have some specific numbers to use when evaluating these teens. Positive reinforcement and compliments are an important element of any evaluation of volunteers and is especially important in this situation.

Awards are given on an annual basis at an evening or weekend event. This event gives a feeling of completeness and satisfaction in the job, as well as being an opportunity for the gathering of families. Awards can be simple and can be a combination of serious and whimsical. The main goal of this event is to recognize the work done by these teens for the museum and the community. Some schools give extra credit for volunteer work and many of the young people ask for letters of recommendation for college applications or paying jobs.

Through the efforts of these volunteer teenagers, many projects have been accomplished at the museum which otherwise might not have been attempted. These Interpretive Guides learn many skills and gain a great deal of self confidence. When asked what they felt most positive about in the past year's work, the following comments were made by a few of these teens at the end-of-the-year interviews:

> *"I never thought I could talk to an adult. Now I can talk to a whole group of them."*
>
> *"I've made new friends and met people I would never have met anywhere else."*
>
> *"Yes, I have learned a lot about wildlife and interacting with the public, but I have also become more self-confident in myself and around others."*

This program seems to be a "win-win" situation! It is a program well worth the trouble it takes to set it up.

WORKING TOWARD A CUSTOMER-CENTERED INTERPRETIVE BUSINESS—A PARADIGM SHIFT

Tim Merriman, Ph.D.
Executive Director
National Association for Interpretation
P.O. Box 1892
Fort Collins, CO 80522

ABSTRACT: Becoming a customer-centered interpretive business will demand a major shift in emphasis for most organizations. Focus, listening, collaboration, leadership, and customer service are common attributes of good businesses. Interpretive businesses that survive and thrive will be those who learn from the time-tested behaviors of business processes. At the center of the business/communication/interpretive transaction is the customer, the visitor, the program participant.

KEYWORDS: Customer, business, leadership, service, collaboration.

Introduction

The customer is always right. That was the credo in my father's business when I went to work selling lawn mowers at the naive age of 13. It was pounded into my young brain, and it stuck. I still believe that we each deserve to be asked about our needs and wants. I resent the salesperson who is bound and determined to sell me something I don't need. In the cultural and natural resource fields, we often presume our products (nature, historic sites, and programs) are so good that they don't have to match the needs and wants of our customer group. However, "The times, they are a-changin'," and we may have to sing our tunes to match the market demand of our customers.

What Is an Interpretive Business?

In times gone by, we viewed our interpretive programs as our gift to the audience. We delivered what interested us with our best presentational efforts. However, we did not view the visitors, audiences, and program participants as customers. Today most public agencies and organizations in the United States deliver a clear mandate to line staff—produce revenue, build advocacy, and meet the needs of constituents. Like private-sector businesses, interpretive programs are engaged in competition for funds, political support, and customers. Interpretive businesses that face the challenges head-on may be those that survive the budget cuts. Interpretive programs are often selected for cuts because they seem to be the "low-hanging fruit," programs without customer-advocates.

Why Should We Be Customer-Centered?

Customers are the reason we have a job. Even when that relationship seems very distant, it exists. Taxpayers support our public parks, zoos, museums, nature centers, historic sites, and aquaria. When our budgets are being cut, we want taxpayers to speak up and defend the public's investment in natural and cultural resources. When they visit those public sites, they want us to be attentive to them. The relationship is very real and extremely important. If we ignore it and treat them indifferently, they are indifferent when our jobs are cut and resources are taken for other purposes.

Being customer-centered fundamentally tracks back to good communication. Listening to the customer is essential. How do they feel about our services? What are they willing to pay for services? What are their preferences? The questions we ask are important, and the answers are more important. And listening to front-line staff is equally essential. Supervsiors and managers should be attentive to the views of the customer contact staff and should also be out there where the customer is being served to personally learn more about what is happening.

Early in my career as a state park interpreter, I survived a downsizing which resulted in 19 full-time and 55 seasonal interpreters being eliminated from our organization. The four of us who were not let go experienced some survivor guilt. When I asked the administrator why he had made such severe cuts to interpretation, he asked, "Why hasn't the public complained at the cut in services?" Interpretive programs disappeared from 70 parks, and the customers seemed unaffected. He pointed out that the four surviving interpretive sites had constituents that would react if the program was cut. The customers at our parks valued the services and would not accept the program's disappearance without reacting.

What Does It Mean to Be Customer-Centered?

We are all customers. We shop for groceries, clothes, cars, and the many other commodities we desire. Businesses that serve us who are customer-centered may not be obvious. They often serve us so well and thoughtfully that dealing with them is like visiting with a friend. We feel good about the exchange—*our* money for *their* high-quality product or service.

When our wants or needs are ignored, it is really evident. Standing in line at the post office or sitting for hours in a physician's waiting room is aggravating. Their lack of sensitivity to our needs indicates their customer indifference. They feel we have no competitive choices, and they act like it. Even the U.S. Post Office is getting more entrepreneurial in the face of varied competitive threats, such as the growing variety of overnight delivery services and electronic mail.

I visited an orthopedic clinic recently that really caught my attention. The waiting room experience was less than 5 minutes, the tests were done very quickly by friendly technicians, the physican introduced himself with his first name, and he explained everything in great detail to my complete satisfaction. The business office handled the insurance forms, took credit cards, had no lines, and no waiting. A week later the clinic sent a feedback form to find out how I enjoyed the interaction with their staff. I loved their performance and told them so.

Information duty, zoo programs, museum programs, historical tours, aquarium tours, and personal interpretive services of all kinds are business exchanges. The customer wants a quality experience and gives up time and money for it. Both are valued by the customer. Customer-centered organizations are focused on providing services within their expertise at a cost the customer can afford. They listen to customers and do research that confirms their observations with data. They continously improve services for which there is customer demand.

What Is the Process in Becoming Customer-Centered?
Many businesses have experimented with this process and set the standard for what to do and how to do it. Applying customer-focused business principles to natural and cultural resource organizations is not difficult. The principles translate well to public and nonprofit sectors despite being developed primarily in the private business sector.

Focus
Richard Whiteley and Diane Hessan, authors of *Customer Centered Growth* emphasize that an organization must develop a laser-beam focus. The first step is to stop doing things that you do poorly that do not have value to the customer. The second step is to study those things your organization does well that are not valued by the customer. You can either quit doing them or find a customer group who appreciates these services and/or products that lack a real customer.

Those things that the customer values that you do not do well must be improved. You can outsource to get the improvements, develop partnerships with those who will improve services, or change your own organization to do the critical service better. The provision of customer-valued services/products that can be provided at a high quality by the organization is very important. This is where you can continue to devote resources and continually improve what is offered. It matters to the customer.

It is useful to ask customers what they are really buying from your organization. Ask yourselves what you are providing. Are they the same? That difference can be critical. They may have come to you for restrooms and food, and your focus is information delivery. Or the reverse might be true. Meeting their needs is crucial if you hope to continue doing what you do in the future. Focus should become an obsession for staff in a customer-centered organization. It matters.

Listening
All businesses that work from a customer-centered philosophy are interested in listening to customers. Whiteley and Hessan talk about "hardwiring" the organization to the customer. A smoke alarm that is "hardwired" to the house electrical system is more reliable than the battery-powered ones. Hardwiring gets at the idea of making listening an in-stream activity that does not require extraordinary effort. It includes the following concepts:

1. Create a listening strategy.
2. Collect, organize and display your information.
3. Create dynamic scorecards.
4. Drive team and individual behavior with the voice of the customer.

Listening can include formal activities such as surveys, comment cards, and focus groups. It also encompasses the daily communications such as information requests, complaints, and the casual contacts such as conversations with customers.

Tom Hinton and Wini Schaeffer, authors of *Customer-Focused Quality*, emphasize how to improve listening skills among staff. They also stress the value of management listening to front-line employees. Line interpreters, seasonals, and volunteers are there answering questions with the interpretive audience. They hear the compliments, the misunderstandings, the complaints, and the problems. They usually have to respond, clear up the miscommunications, and manage problems. Listening to their experiences with customers should be a part of the organizational "listening" process. Management by wandering around was championed by Phil Hewlett of Hewlett-Packard Inc. Hewlett emphasized the value of supervisors being out there on a daily basis to observe business activities.

It is also important to recognize that customers who deserve study include lost customers, lost prospects, potential customers, and the customers of competitors. They have not chosen to be in your audience for some reason. You should want to know their reasons for avoiding your services unless you are challenged by too many customers. Many recreational sites really struggle with this problem. Their customers come in too large a quantity for the resource or in short time periods: the season, the weekend, the holiday. It is difficult to listen when you are harried. Special strategies have to be employed. It makes hardwiring the voice of the customer into the organization even more important.

Collaboration

Organizations with poor communication among staff often turn to forming teams with some sort of total quality management process. The functioning of teams becomes an end in itself. The real need is universal collaboration to achieve the purpose of the organization. Often that gets lost in this age of specialization. Some agencies describe it as "stovepipes." Communication goes up and down within resource management, interpretation, or law enforcement without any potential for horizontal communication among peers. The customer gets lost in this, and the agency mission may get lost as well. Collaboration can only happen if everyone understands that serving the customer within the framework of the organization's mission is paramount—more important than departments, teams, lines of authority, and the many other bureaucratic obstacles.

Whiteley and Hessan describe the seven pillars of universal collaboration as:

1. A powerful overarching purpose or mission is more important than job descriptions.
2. People at all levels are involved in decision making.
3. Internal customers are recognized by departments that serve other employees.
4. Collaboration skills are a part of the training process in the organization for everyone.
5. Teams are effectively deployed when they are needed with appropriately trained team leaders.
6. An organizational structure must be designed for serving customers better without traditional departmental lines.
7. Infrastructure has to support and promote horizontal communication and work.

Leadership

The customer-centered organization needs effective leadership that knows how to make these processes function. Customer-centered leaders need the following qualities according to Whiteley and Hessan:

1. A passionate connectedness to customers and employees.
2. A deep commitment to creating meaning for people in clear, concrete terms.
3. An ability to mobilize people and help them see progress with a mix of both challenge and support.
4. The capacity to inspire and develop others to be leaders.

This notion of leadership is not "top-down" control but involves support of staff. They view leadership as being there to help them, not "judge" them. Coaching others toward goals that are clear works better than pushing them toward vague achievement. They need to know when they succeed, when the goals are met. It is helpful to celebrate the achievements from time to time as a collaborative group. Allow everyone to know how they had a part in meeting the goals of the organization. Celebrate your successes visibly.

Many organizations have adopted 360-degree evaluation programs that give supervisors feedback from their employees and colleagues. Coaching works both directions, and effective leaders need not fear guidance from their colleagues and employees.

Customer Service

It is valuable to create a customer service person or group according to R. Lee Harris. Customer complaints should be viewed as an opportunity. When you correct complaints to the complete satisfaction of a customer, they communicate that to others. Satisfied customers share their satisfaction with friends. Unhappy ones are even more vocal in telling others about their bad experiences. Resolving complaints to the complete satisfaction of customers is essential.

A prompt response to a customer's problem is also important. It can even be an explanation of why it will take a more extended time to find resolution of the problem. People understand the problems you may face in helping them if you explain. They presume that you are indifferent if the response is slow, even if you give some satisfaction in how you treat the problem.

Conclusion

Sales-driven organizations have given way to market-driven ones in the last few decades. Market-driven businesses want to know what the customer thinks of the services and products delivered. Making the sale is not the only objective. Customer-centered business managers believe that the profits follow if you are really customer-oriented. These profits can come in the form of advocacy and political support for public agencies. Interpretive organizations are being driven toward customer-focused behaviors. The days of delivering programs and services with no customer demand will die a slow but necessary death. Every period of austerity in government results in diminished budgets, and interpreters are often the first to be let go. In the past some government managers have cynically cut the front line so the customer would feel their pain from reduced budgets. Making the taxpayer feel the pain often backfires and results in less support for the agency or organization and their missions.

A customer-centered agency would do anything to maintain the front line of communication with customers—the interpreters. Recently the National Park Service faced the challenge of reduced services, as did most of the federal resource agencies. Within interpretation they placed an emphasis on maintaining the front line interpreters while absorbing the loss in personnel in the middle and upper management ranks. They placed the customer first in this decision.

The pressure on interpretive organizations to become better businesses has always been there for nonprofits, and it is a growing movement for government organizations. Earned income, grant writing, and philanthropy promotion are becoming as common to public-sector organizations as they are to the nonprofit sector. The customer-centered organization has a much better chance of building grassroots support than a top-down organization. Resource agencies have enjoyed support from customers even when not being customer-oriented. The shift toward being a customer-centered organization will only make the relationship with constituents stronger.

At its core, the customer-centered organization is one that is based on good communication. Every interpretive text or teacher encourages us to know our audience. The dialogue with the audience must be two-way—an exchange. This business strategy takes it to a new level by working with data to continously improve our communication and performance. Our mission to preserve resources, educate children, and stimulate interest in heritage will be the ultimate winner.

The customer-centered paradigm will demand a major shift in emphasis for most interpretive organizations. Focus, listening, collaboration, leadership, and customer service must be the continual foundation for program planning and implementation. Interpretive businesses that survive and thrive will be those that employ effectively these time-tested behaviors of businesses. At the center of the business/communication/interpretive transaction is the customer, the visitor, the program participant.

References

Harris, R.L. 1991. *The Customer Is King.* Milwaukee, WI: ASQC Quality Press.

Hinton, T., and W. Schaeffer. 1994. *Customer-Focused Quality.* Englewood Cliffs, NJ: Prentice-Hall.

Whiteley, R., and D. Hessan. 1996. *Customer Centered Growth.* Reading, MA: Addison-Wesley Publishing.

Resource Interpretation and Heritage Tourism

Set aside in 1872 by President Grant, Yellowstone is an embarrassment of riches: canyons, waterfalls, hot springs, geysers, elk, moose, bison, bear, bighorn and spectacular scenery along the Beartooth Scenic Byway. The first tourists toughed it out on pack trips and in stage coaches. But when the railroad appeared at the northern gates of Gardiner in 1902 and the automobile in 1915, the visitation began to climb from 5,000 people in 1895, to 50,000 in 1915, to 260,000 in 1929, to over 3 million today.

FROM BIOPHILIA TO CLEAR-CUTS— HOW MUCH OF YOUR PERSPECTIVE IS SHOWING?

Linda M. Feltner
Wildlife Artist and Graphic Designer
P.O. Box 4251
Seattle, WA 98104

Wendy Walker
Assistant Professor
Huxley College of Environmental Studies
Bellingham, WA 98225

***ABSTRACT**: How can interpreters make sure that personal perspectives don't get in the way of effective communication with audiences? This presentation is an exploration of ways to understand and reduce bias in interpretation and to use different perspectives to amplify and enhance written and visual interpretation.*

***KEYWORDS**: Perspective, bias, exhibit, art, writing, values, controversy*

Introduction

Objectivity is impossible. All forms of communication contain built in assumptions and biases. We see through our own eyes only...and those eyes frame what we see and how we see it. No matter how hard we try to be objective, we come to any subject from our own perspective. We can't help it.

But we interpreters need to be able to communicate to a wide variety of people. Our audiences include people of differing ages, cultures, geographic origin and value systems. It is counter-productive to communicate as if the audience was made up entirely of people like ourselves. We stand a good chance of failing to get our message across and run a very real risk of offending people in our audience. We have to learn to put ourselves in the shoes of others and devise interpretation that will speak to as wide a variety of people as possible.

Whew! That sounds like a tall order. And it is. Especially if you are not sure who your audience will be from day to day or week to week. Some interpreters may see people from around the world and may have audiences consisting of hundreds of people. It is difficult in many situations to predict accurately who will be the audience. So effective interpretation must be predicated on an overall understanding of how humans in general think, feel, learn and process information.

A Picture Is Worth a Thousand Words

How many times have you heard that tired phrase. Maybe it is repeated so often because it's true. We humans are visual creatures; we access our world largely through our eyes. Interpreters can meet the need of this dominant sense by including graphics, art and visual aids in interpretive programs and exhibits.

Visual images usually drive the interpretation in non-staffed exhibits such as interpretive signs and visitor center displays. Powerful interpretive art can grab the audience's attention and illustrate and amplify the verbal message. Art can also evoke emotion and provide a dramatic backdrop for stories about natural and human history.

One Sensory Word Is Worth a Thousand Words of Scientific Jargon

Good interpretive writing speaks to the senses and to the experiences and backgrounds of the visitors. Effective text includes powerful metaphors that relate natural and human history to the lives of the readers.

Interpretive writing should be specific, concrete, concise and powerful. A single sign or exhibit should include as few words as possible. Those few words need to explain, amplify, and point beyond the graphics on the exhibit.

Effective and inclusive interpretation includes word pictures and visual images that are accessible to people of different ages and cultures and is free of racial, sexual, and other overt biases of language or images.

Interpretation or Propaganda?

How do you trouble-shoot your interpretation to make sure that it isn't so biased that it becomes propaganda for your own or your agency's point of view? Learning to see the biases in advertising can help you spot the biases in you own work.

Advertisers have used "psychology of dread" of blatant negativity towards other products to cultivate the viewer's good will towards them. Examples of advertising using predators such as hawks, snakes, tigers and gorillas use headlines such as, "Taming the Beast," "Talons of Terror," and "Venomous Vengeance." Often the "beast" is docile and used wrongly in context with the message. Does the average person know the difference? Do we assume that the average visitor has the same knowledge as we do? Could they have more knowledge?

The same image can be used to portray attitudes felt by the interpreter. As an example, consider a portrait of a raven or falcon. Do the words and image convey the notion of the bird as "beady-eyed" or as "keen and intelligent?" There has been an historical bias toward birds and animals formally called "vermin." How can we take the propaganda of the past and recast these creatures as vital elements of a food web with values other than their relationship to human food sources?

There are many different images of the same animal from which we can choose to illustrate or write about a species. The raven may be ripping open a piece of flesh with its beak or it may be using its beak delicately to feed its tiny nestling. Most of us have a general sympathy for parenthood. Is playing upon that sympathy responsible interpretation?

Appealing to Both Sides of the Brain

Psychobiologist Roger W. Sperry, awarded the Nobel prize in 1981, led the research in the dual nature of human thinking. He postulated that verbal, analytical thinking happens in the left hemisphere of the brain and that perceptual and visual thinking happens in the right hemisphere. Each side receives the same sensory information, but processes the information differently.

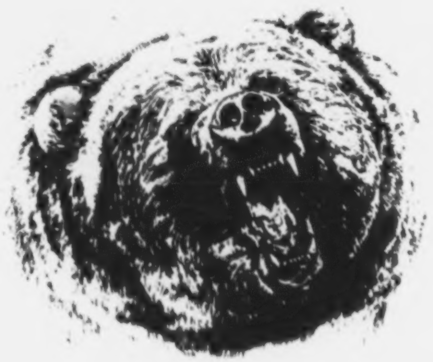
The left hemisphere understands words, analysis, step by step explanations, logic, and linear ideas. The right side experiences intuition, leaps of insight, imagination, metaphors, dreams and visual images.

Interpretation that addresses both sides of the brain will be richer, more multifaceted and will be more effective at reaching different kinds of people and the different sides of each individual visitor.

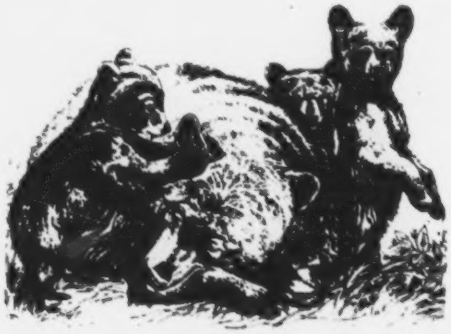
For example, a linear, scientific explanation of the water cycles in a forest would appeal to some individuals and to the left brain side of many of us. If a metaphor was added, however, the interpretation would reach out to many others and to the right brain side in all of us. Metaphorically describing the forest as an animal and comparing water to its blood can allow many of the relationships in a forest to be presented in more than one way, thus enriching the interpretation.

Effective Interpretation Can Be Controversial

Verbal and graphic images can subliminally portray a message. If the interpretation is effective, it can be so powerful that it generates emotions and value judgments in the viewers. Imagine a grizzly bear interpretive sign. The bear portrayed is a full frontal view of an attacking grizzly, its teeth bared. Is this image value-free? No, of course not. Imagine a second interpretive sign portraying two cute and cuddly-looking cubs playing in a mountain meadow. Is this image value-free? No.



So, should interpretation avoid being value-laden and the result in controversy? Maybe the bear panels should be scientific illustrations of the species. But totally neutral images can be boring and noncaptive audiences will learn little from them. Is objectivity only possible in a format that nobody would want to look at?



Maybe the answer is to reach objectivity by presenting many different subjective examples. For instance, the bear interpretive panel could include both the snarling and the cute images and ask the visitor some questions about how he or she sees carnivorous species such as grizzlies. The interpretation can present many different ways of looking at one thing, encouraging the visitor to make up his or her own mind.

The Power of Many Points of View

Committees can be ineffectual, frustrating and inefficient. Their main redeeming feature is that the project benefits from many points of view. Planning interpretive exhibits and programs can be enriched by including several people with different values and temperaments in the process. That doesn't mean that a committee writes the text or creates the art. It means that several people suggest ideas and discuss interpretive approaches.

Interviewing people involved in the issue you are interpreting can give you words, phrases, insights, photographs and ideas for drawings. You can borrow the eyes of others to see your subject in a new way. Using direct quotes from historical figures or scientists can add perspectives to your work that you would never get otherwise.

MAKING GEOLOGY COMPELLING

Sandra Snell-Dobert
Norris District Naturalist
National Park Service
P.O. Box 168
Yellowstone National Park, WY 82190

ABSTRACT: *The geologic stories of our parks, forests and neighborhoods need not be boring and uninspiring. With the use of some time-honored interpretive principles and techniques, along with a little creative energy, geology can become one of the most compelling stories we share with our visitors.*

KEY WORDS: *Geology, interpretive principles, interpretive techniques, compelling stories.*

Introduction

We've all seen it—the interpretive program on geology that puts the audience to sleep and leaves even the most enthusiastic rock hound seeking shelter from terminology overload. Yet it is really fairly simple to add life, energy and sparkle to the topic of geology. All we really have to do is look back at the foundations of our profession, to Freeman Tilden's Principles of Interpretation, to find the key to unlock the fascination with the geologic past. In his book *Interpreting Our Heritage*, Tilden lays out six principles of interpretation aimed at encouraging interpreters to reach out to their audiences. Each of these six principles can be applied to our challenge of interpreting geology. For our purposes here, we will use much abbreviated forms of the principles; please refer to the original for more detail.

The Principles of Geologic Interpretation

1. Interpretation relates to the experience and personality of the visitor. If geology doesn't excite the audience in its purest form, perhaps plants, animals or scenery do. Why do certain plants grow where they do? Look into the soils of your area and find out their origins. What attracts animals to a certain locality? Particular preferred plants for forage, or mineral licks in an area often attract animals. Look for animate links to the geologic past that can bring the rocks and soils into perspective for the visitor. What processes have left your area with such exquisite scenery? Many areas would not look as they do without glaciation, volcanoes or other major events of the past. Has your group been to Mount St. Helens or the Columbia Ice Fields? Do they remember the eruptions of Mt. St. Helens and Mt. Pinatubo? Using references to more recent geologic events can often bring the past into clearer focus.

2. Interpretation is revelation based upon information. Pure information is so tempting in geology. Raw facts—volcanic eruptions, glaciers thousands of feet thick, shallow oceans coming and going, the Pleistocene, the Eocene, Jurassic, Triassic, and on and on come so easily to us. Dates, dates, and more dates without link to anything relevant to our times tune our audiences out before we really begin. This information base needs to be tied to solid themes that give us reference and meaning. Examples: "The scenery we see today is the result of aeons of time and fascinating processes," or, "Rivers flow where they do, plants grow where they do, animals thrive where they do, because of geologic processes that have set the stage." These themes, and they are endless, give us as interpreters a framework on which to pin our geologic facts and provide meaning to the audience.

3. Interpretation is an art that combines many arts. The use of the arts in their many forms can clarify ideas, add interest, and help us relate to the visitor. Art often takes us beyond words into the realm of emotion that is so powerful. The visual arts, photography, graphics, drawings, models, and crafts can be used to illustrate big ideas and concepts difficult to convey with words alone. Who can argue the power of a photograph when showing before and after images of earthquakes and volcanoes? Models are often the best way to show how huge features or remote and dangerous processes work. Geyser models can show us what goes on under the ground during an eruption. Glacier models speed up a very slow process to show us formation of landscapes in real time. Try storytelling and dramatic arts. How have other cultures told the compelling story of your area's geology? Create your own folktale to explain local landforms and share it along with the current geologic theory. Use your imagination to bring the past to the present and the huge to the human scale.

4. Interpretation is not instruction but provocation. We are not trying to teach geology to our audiences; we are trying to help them see how the scenery came to be and to get them excited about earth's dynamic processes. Consider yourself a guide to the revelation of the earth's past. Our task is to open the eyes of our audience to the amazing history of our earth. Entice people with images: "Let's go back to 140 million years ago in this very spot. Do you have your scuba gear on? You'll need it as we will be on the bottom of the ocean!" or, "If you had been here 15,000 years ago, you would have really needed that down coat!" Ask questions of the audience and help them find the answers. What processes could have left this landscape? What happened here? Send your group home with the skills to figure out other areas too.

5. Present a whole rather than a part.

Parts of the story may be fun and revealing, but if we help our visitors see the whole process, the bigger picture, we give them a much loftier prize. The eruption times of a geyser are fascinating, but most people really want to know how it works and why it is there. A good interpreter can lead on into how the geyser affects the area around it, including the plants and animals dependent upon it for survival. How has the geologic story of your area affected the weather, elevation, plant life, animal life, flow of rivers, and movement and settlement of humans? You could call this ecosystem geology, cultural geology or just, "the big picture.

6. Children require a special approach.

At the very least, children require a bit more attention to technique. Hands-on geology is the best bet to get children involved and excited about earth processes. Models, storytelling, imagination, guided imagery, and play acting are all effective techniques. Try making a glacier model with debris frozen into a block of ice, place it on an inclined board and watch what happens as it melts. Build a water table. Have children act out an eruption of a volcano. In a mixed age audience, assign the children to make the sounds of geologic processes. Oceans pound, volcanoes burble and hiss, mountains rumble as they rise right there in your amphitheater!

Conclusion

Geology needn't be boring to the audience or intimidating to the interpreter. With some creative thought and energy and the help of Tilden's Principles as a reminder, what once was a dull lecture can now be an interpretive experience.

Reference Cited

Tilden, Freeman. 1957. *Interpreting Our Heritage.* Chapel Hill: University of North Carolina Press.

PARTNERS IN PASSAGE: CERTIFYING NEW PROFESSIONALS

Don S. Follows
Interpret Alaska
12315 Wilderness Road
Anchorage, AK 99516

ABSTRACT: *Partners in Passage is a time-tested, public/private partnership model involving training, certification and licensing of seasonal, community-based professionals who live and work in the resource region and who care about the federal resource lands and local culture. This partnership between government and heritage tourism reaches goals for high-quality visitor services and expands the experience options of today's diversified traveler.*

KEYWORDS: *Heritage tourism industry, trilateral partnerships, local hire, fee interpretation, quality services, certification, international guides, interrelated publics, cost-effectiveness, downsizing, tour operators.*

Introduction

As government budget earthquakes shake program stability, management must develop value-added, visitor experiences with heritage tourism partners who can reach more people and extend agency messages for less cost. Opportunities to encourage self-employment of community-based experts who live and work in the resource region and who know a great deal about the resources abound. The Alaska model and its variations have been expanding since 1986.

Working as independent contractors, these professionals can extend the agency message, expand services, help husband shrinking budgets, conduct revenue-producing activities, encourage local hire, stimulate small businesses, garner community support, foster fee interpretation, demonstrate unique resource knowledge and share their history and culture as only local inhabitants can do.

Travel and Tourism

Within this decade, travel and tourism will be the largest industry on the face of this earth, employing one out of every 14 individuals and providing an annual economic contribution in trillions of dollars! In the United States, tourism is the number three retail industry next to automobile sales and groceries. National park tourism, hereafter referred to as a segment of the "heritage tourism industry," has been a multibillion-dollar industry since the early 1960s.

Travel and tourism is a multifaceted industry which includes all the components of the overall visitor service experience provided through transportation, meals, shopping, accommodations, sightseeing and special attractions.

Paradigms for Progress

There are exciting new ideas emerging from current paradigms of change which may swing interpreters full circle to their point of origin some 75 years ago when interpretation was born on the frontiers of western park lands. Government agencies and tourism sectors can expect closure as they work in closer harmony as innovative partners in conservation and service.

For many government agencies, new rules have been written, card decks marked, shuffled and dealt to trembling hands awaiting outcomes of their reorganizations, employee downsizing and general disruptions the likes of which have not been seen in the past generation.

The Partners in Passage concept is a working model based on the "Five Maxims for Interpretation" presented at the 1993 National Interpreters' Workshop in Washington, D.C., and at the 1994 Heritage Interpretation International in Barcelona, Spain (NAI Proceedings 1993).

The 1993 paper predicted hard times ahead for government land management agencies! The five maxims for interpretation could help change old attitudes about interpretation and define a strategy for the challenges ahead. This paper supports public/private partnerships and shares a flexible model derived and already implemented within the Alaska heritage tourism industry.

Past government trends which encouraged public/private partnerships within tourism and other private corporations have opened unique opportunities for federal and state agencies to become involved in cost-effective management. Unfortunately, some federal partners now participating tend to expand their costs while placing financial demands on private industry.

Why Partners in Passage?
Partners in Passage supports fee interpretation, hires local guides and is a public/private program based on the following premises:

- Local people can be an excellent interpretive resource.

- History and culture are often within the living memory of community elders.

- Tour operators who bring clients to the region rely on the expertise of local people to enhance the interpretive experience.

- Local people often know more about the history and land use than do government employees transferred in from outside the region.

- Local tour guides create an economic base for small communities that can be quite substantial.

- Local guides can be trained and certified to present quality interpretation for the park, forest, refuge, or similar reserves.

- Contracting tour services to local guides can be a cost-effective measure in times of government shrinking budgets and downsizing.

- Certification of guides brings a professional level to the independent contractor who is not only certified but licensed to perform work.

- Local guides often form the nucleus of a "Friends Group," as they learn to understand government planning and private-sector actions which are communicated through local communities.

Heritage Tourism Industry
Designing the "quality visitor experience" for their customers is the constant and demanding challenge facing vacation planners, tour operators, guides, tour leaders and numerous other professionals associated with the thematic segment of industry travel known as the "heritage tourism industry." Heritage tourism includes ecotourism, adventure touring, wildlife watching, and other emerging market expressions of the outdoor recreation associated with travel and tourism.

Heritage tourism is defined as a market segment of the overall travel industry which is destination and experience oriented, and which involves thematic and interpretive presentations by guides, interpreters, or tour leaders while sightseeing, attending special attractions, and visiting significant natural and cultural areas integrated on regional and national scales.

Heritage tourism guides and park resource interpreters have much in common. They can provide and share quality customer service programs and excursions through natural and cultural landscapes, and to thematic attractions scheduled within well-planned travel itineraries. National parks and forests are part of the heritage tourism industry! In fact, national park interpreters originated as an outgrowth of tourism in the 1920s!

Tourism Partners Support
The 1995 National Interpreters' Workshop was primarily sponsored by the heritage tourism industry at Disney World and Sea World, Florida. Most of the 15-member national planning committee, who had worked for over three years in planning, were from the nonfederal sector. Two were officers from the Resource Interpretation-Heritage Tourism Section of NAI.

The workshop showcased excellent customer service, quality interpretation, and advanced technologies from a wide variety of commercial experiences on parade. Tourism speakers presented sessions on ecotourism, partnering and fee interpretation.

Congressional criticism was leveled at the National Park Service and other agencies for participating in the 1995 National Interpreters' Workshop in Florida when a heavily slanted Associated Press article claimed that park rangers were enjoying themselves at Disney World and Sea World at taxpayers' expense during the historic government shutdown. In subsequent letters of explanation, the National Association for Interpretation did not defend the cooperative venture or explain the positive attributes of the joint training.

Opportunities to Showcase Interpretation
This opportunity to step forward and show the relationship between heritage tourism services and the federal, state and local counterparts was lost. Ignoring hundreds of examples of quality interpretation and improved customer service ideas presented at the private heritage sites, the national office defended their national workshop location by simply saying, "We usually hold our workshops at more rural locations."

Successful NAI national workshops had been previously held in urban places such as Cleveland; Washington, D.C.; Minneapolis-St. Paul; San Diego; Charlottesville; and St. Louis—all perfect sites. The National Association for Interpretation ignored a chance to complement quality interpretation and customer service from Florida's private sector examples.

Since the establishment of NAI's Section on Resource Interpretation and Heritage Tourism in 1991, the Executive

Board has consistently refused to approve goals and objectives which endorse integration of tourism industry interpretation with government services. The times are changing!

Ideal Partners

Ideal partners will be those who can demonstrate beyond their market slogans the true value of resource and heritage interpretation. Partners in Passage does not require big business to accomplish government interpretive goals, but together they can accomplish more. In the Alaska model, a six-week training course was offered to older community members with good communication skills, business experience, nice personalities, interest in tourism, natural resources, and people in general. Diverse occupations were the rule, everything from retired teachers to realtors. Housewives, store clerks, college students, driver-guides, naturalists, retired resource managers, fishermen, and various tour operators applied.

Because older applicants had developed career aptitudes in public relations, business, speaking and other communication techniques, training concentrated on the essentials of tour guiding. The course was shortened to weekend seminars for those already working in tourism or who had significant guiding experience elsewhere.

At the successful conclusion of training, graduates were awarded a certificate which tour companies recognize. Certified graduates of the training are moved to the top of the tourism industry application pile.

State and National Standards

The United States has been somewhat lax in establishing certified tour guide standards on par with Europeans and Asians. We are one of the few nations which do not have local or state laws protecting guide business from uncertified and licensed vendors. Guide certification is worldwide, but because of the wide array of interests competing for the same target markets, only a few cities—such as Boston; San Francisco; Washington, D.C.; New Orleans; and a few others—have recognized laws which protect guides.

In the author's travels to over 35 nations, no uniform program standards were observed to be the same, however, all required training at various levels to receive certification. Most nation's of the world have guide training courses which required to pass an extensive examination for certification. In most countries, tour guides are highly respected professionals who can command top fees. In Venice, Italy, tour guides wait years for the honor of being selected and to represent their beautiful city.

Training schools vary from a few months to a full four-year course. Guides are certified, which is the first requirement to get their license. In many countries, guides who forget their identification credential may not be admitted to the motor coach tour. Furthermore, if anyone without a license is arrested for giving a tour, that person can be heavily fined in Vienna, Austria, and other world cities.

Quality interpretation is not always found internationally, no more than quality interpretation among various resource management agencies in America can be found consistently. Local and state law should support an overriding mission to legalize standard requirements for guide certification and licensing. Standardization is important to maintain the quality of training and the value of the certification, both to government agencies and to ultimate benefactors in the heritage tourism industry.

Enhancing the Profession

Within the heritage tourism industry, the professional guide is often an independent contractor who sells his or her services to the tour operator or facility owner for a preestablished price. Guiding or tour management options are the contractor's primary business whose profits grow in direct proportion to the contractor's individual research, knowledge, training and ability to please the customer.

Unhampered by the triumph of bureaucratic trivia and myriads of paper tasks facing today's government interpreters, the private sector guide can dedicate all efforts to becoming the most desired guide in his or her field. Through research, study, and practice skills, programs are enhanced.

Freeman Tilden in *Interpreting Our Heritage* has written that the true interpreter is always ready with information, studious in research and "always ready to go beyond the apparent to the real, beyond a part to a whole, and beyond a truth to a more important truth" (Tilden 1957).

In the author's opinion, an important first step in the public/private partner concept for heritage tourism and resource interpretation is to establish a national tour guide certification program for all the federal managing agencies which deal in tourism. This would place everyone on equal footing and recognize the professional partnerships which could emerge from players with equal credentials. After all, resource and heritage interpretation is a value-added product for the heritage tourism industry! Good tours sell!

Conclusion

Partners in Passage is an opportunity to encourage self-employment of community-based experts who live and work in the resource regions from which the interpretive and ecotourism themes emerge. It fills the gap left from shrinking federal budgets and personnel shifts, while still spreading the agency message. In a triad of cooperative ventures, federal agencies, local contractors, and tourism industry managers unite in beneficial associations which can improve resource conservation, customer service, and local self-employment opportunities.

The time has come to encourage fee interpretation, public/private partnerships based on intrinsic value systems and the upgrading of government interpreters to meet national certification standards, yet to be written. Not until resource agencies of the Departments of Interior and Agriculture realize that people are primary resources, will managers step outside their boxes to solve regional, national and international issues awaiting them.

Fee interpretation, certification of guides and resource interpreters, contract interpretation, free enterprise, and stimulation of local economies linked to heritage tourism are the new dice on the board to help agencies stretch their shrinking dollars. How well are current interpreters prepared to play the new crap shoot?

Government budget shortfalls are not finished! Confidence in government by the American public is not restored! They know that the reinvention of federal governments has to be more than the reshuffling and dealing of newly marked decks; the creation of market slogans; the proclamation that new agencies have been born, and much, much more than the mad scramble for the last chair when the music dies!

Indeed, for the wholeness of our federal land-managing agencies to survive, creative managers must reassemble the isolated carvings of their vested empires, collect and mortar those rich fragments of interrelated parts into semblances of a new future through the rediscovered cornerstones of their past.

Partners in Passage can rebuild the quality of customer service our nation demands, restore confidence in the American free-enterprise system, and provide value-added products for government and for the heritage tourism industry...our new partners in passage!

VIBRACORES, CLOVIS POINTS, AND MAGNETOMETERS: GAINING INSIGHTS FROM AN ARCHEOLOGICAL ASSESSMENT FOR INTERPRETIVE PROGRAMS

Diane G. Stallings
Colonial National Historical Park
P.O. Box 210
Yorktown, VA 23690

ABSTRACT: *This presentation discusses practical ways to incorporate findings from an archeological assessment into the site's historical interpretive programs. The focus of the presentation is the importance of communication and staff training to achieve success in this field.*

KEYWORDS: *Assessment, archeology, historical, interpretation.*

Introduction

Having had the bad luck of scraping by in 9th grade science class with less than a minimum amount of general scientific knowledge, imagine my surprise and chagrin to find out that an archeological assessment would take place on my site, Jamestown. As the site historian, I would have to figure out how to incorporate information from this assessment for interpretive programming.

Frankly, my greatest fear was that I would have to transcribe technical scientific reports and make heads or tails from them for public consumption. But the good news is that, after four years of working with the multidisciplinary team assigned to this project, it turned out to be less daunting than I had feared. For anyone who is involved with a complex archeological assessment for a historical site, its challenges include an introduction to the newest technological advances which can enhance your current interpretive programs and reinvigorate your line staff. Not only will the resources be better documented for preservation, but the public will benefit from your increased knowledge.

The Jamestown Archeological Assessment: What is it?
In 1992, the National Park Service contracted with the Colonial Williamsburg Foundation and the College of William and Mary to conduct a five-year archeological assessment of Jamestown Island. This project used a multidisciplinary approach with work by archeologists, anthropologists, biologists, geologists, historians, and computer experts.

The main goals of this inaugural assessment were to:

1. Determine the geological and topographical appearance of the island over the last 12,000 years.

2. Determine land use practices of the American Indians and early European inhabitants.

3. Locate all archeological sites on the island, including possible prehistoric settlements, outlying 17th-century farms and plantations and 18th- through 20th-century features.

4. "Reconstruct" the town site through computer mapping (track the rise and fall of Jamestown from the 1607 contact period to present).

5. Assemble documentary, cartographic, archeological, architectural, and artifactual information about Jamestown Island for future research and interpretation; write technical reports; and produce materials for public use by spring of 1997.

Why Are We Doing This?

As some of you might know, the 400th anniversary of Jamestown is right around the corner in 2007. It is a good idea to get baseline research done before the bulldozers arrive to build a new visitor center and other large structures that miraculously appear with infusions of big bucks. We anticipate that there will be growing interest from state, county, and private organizations the closer we get to this celebration year.

But that's not the only reason for an assessment that cost the taxpayers approximately $200,000 per year. The biggest reason is the collection of new knowledge which will help us make sound management decisions for the preservation and interpretation of the site. And according to federal law, federal agencies are required to conduct these inventories of their sites.

What Are Some Practical Tips from the Assessment Process?

- Carefully write and review the cooperative agreement between your agency and the contracting parties. It will give you a clear understanding of who is doing what and what type of assistance is expected from each participant during this lengthy period of association.

- Find out as much information as you can about the institutional inner workings of your "marriage partners" so you know who you can approach to get needed information. Also each of the partners needs to be clear about their own reasons/agendas for this joint partnership. Money from the project is not enough to motivate the partners to work closely together.

- Learn the names and expertise of each participant quickly and know how they fit into the scheme of things. Finding who is doing what is critical so you can determine how to develop a realistic working relationship with all the various participants. The more complex the project is, the more time you will need to learn who is on first and what is on second.

- Show up at the meeting table with as many staff people as possible so that your partners will know who you are and what you do. People in academia and other private foundations sometimes have a "fear of uniforms." They need to know that you represent the site and the public interest at heart. It also helps the academics in clarifying their ideas for public consumption. Quarterly meetings were held at the site to discuss the ongoing progress of the assessment's various projects. Each expert discussed his/her findings and what latest discoveries had unfolded. This was the "golden opportunity" for the park staff to see first hand "academia, et al." in action. Of course, the best part of the experience was being able to regale them with questions. This started the dialogue and showed that the park staff was interested in their work and wanted to start incorporating this information into public programs.

- If you are doing any kind of archeological excavations on the site, take time to plan a "special ground-breaking" ceremony and invite the press. We spray painted a regular shovel gold, invited a class of second graders from a local school who would be graduating from high school in the year 2007, and had the superintendent of the park and associated partners give rousing speeches about continuing our research at the site and how wonderful this assessment would be. Believe it or not, we made the local news and the kids were thrilled to be part of a historic ground-breaking ceremony at Jamestown.

- Periodically issue press releases about findings from your assessment projects. For example, we have always thought that human habitation of the island was about 5,000 years ago. After a prehistoric archeologist found not one but two Clovis points (Paleoindian projectile points circa 12,000 to 10,000 BP), the reevaluation of human habitation on the island seemed like a logical process to investigate. Local newspapers usually are hungry for specialty stories, so getting press releases to them can generate public interest and support.

- Be sure that the cooperating agreement's statement of work includes seminars and workshops at the park site to provide historical, scientific and management information to the staff and public. That provides you with a golden opportunity to get outstanding speakers for special events such as our annual Jamestown Commemoration weekend in May. The staff felt it was important that the public have access to the current status of projects. By having speakers during special events, we increased the visibility of the assessment. This involved the public and got them excited about the work of the assessment through the eyes of those very people who were working on it. All of these sessions were taped for staff training, as well.

- Also, be sure the agreement covers providing regular briefings, seminars, written data and other information to park staff concerning ongoing research related to the assessment so you can tap into the great pool of talent for staff professional development. Once it becomes fairly clear who the major players are from your cooperating partners, and what type of expertise they possess, arrange for periodic mini-training sessions for the staff. Of all the benefits from this five-year cooperative agreement, staff training has proven to be a big plus! Here is where you can get your money's worth in professional development for your staff which normally would be impossible to buy. In addition, we were able to host outside training workshops at the park for the benefit of staff and others which brought in specialized equipment to be used on projects for the assessment (such as a magnetometer used to locate iron and brick).

- Periodically sit down with the staff and review what information has come from the assessment and determine what is useable for programs. Find out what areas they need help with so you can tap into the needed expertise to assist their development. Obviously this requires long-range planning to coordinate schedules for staff and partners. It also helps if you prepare objectives for your training sessions to help communicate to the presenter what you expect from these sessions.

- The periodic newsletters which the partners developed on their findings were distributed to the academic community and interested professionals free of charge. Arrangements were made with the museum book store in the visitor center to sell them to the public at a modest fee. The development of these newsletters was a concrete way to see the ongoing results from this partnership in print. With so much going on in regular operations, it was easy to get distracted and forget what was happening with the assessment. Another way of organizing what may become massive amounts of information is to set aside a special file in the library and use bulletin boards in the office for current reports, press releases, etc. so that materials will reach the staff immediately.

- Have the staff develop easy to understand site bulletins concerning assessment results for free public distribution at the main information desk. In conjunction with that effort, develop temporary exhibits on various topics of the assessment which will appeal to the public. For example, the first archeological survey of the entire site was done by a team of archeologists from the College of William and Mary. They dug over 6,000 shovel test holes 20 meters apart on 1,500 acres of wetlands and uplands. This massive project took the better part of one year, and information from this survey expanded knowledge about island habitation further than anyone would have ever guessed. Setting up a display in the lobby with the wide range of artifacts collected from this survey piqued the public's interest. It also gave us a great opportunity to show objects from these shovel tests which normally would have gone straight back to the lab, out of sight, for processing. We were able to use the raw data from the field for a temporary exhibit and get the public excited about the process before the objects had to be returned for cataloging.

Conclusion

Well, I didn't go crazy dealing with any "mad scientists." The experts from the various organizations were fascinating to work with and, for the most part, we were able to communicate on a common meeting ground. Granted, there were some technical reports on topics such as differential pollen preservation and ground-truthing with various instruments hard to pronounce, that made for some difficult reading. But the basic fact of the matter is, the entire staff and the public benefitted greatly from exposure to concepts and discoveries about the site which we didn't know before the assessment took place. Naturally this assessment had a price tag (other than the $200,000 per year) in the drain on staff time for assistance with projects. Probably the Jamestown Curator suffered the most with requests from partners on access to the artifact collection and archival records. Unfortunately, there were many off-site conferences where the experts presented papers on their findings which did not always find their way back to park staff's hands. All agencies, be they public or private, have their own institutional agendas and you need to be clear about your expectations from each other so you don't wind up waking up in the morning with strange bedfellows (so to speak!). But on the whole, the training opportunities and special projects which staff members were able to work on made this assessment a once-in-a-lifetime experience.

Acknowledgment

The author wishes to thank David Riggs, Jane Sundberg, and Sandy Groves for their encouragement and comments. Also thanks to the Jamestown park staff who took the information and ran with it. And finally, much thanks to Curt Gaul whose enthusiasm regarding the assessment never faltered. I pay homage to his ideas on how to incorporate information from the assessment into interpretive programs.

WHO IS KILLING THE NATIONAL PARKS?

Glen Kaye, Interpretive Specialist
Southwest System Support Office
National Park Service
P. O. Box 728
Santa Fe, NM 87504-0728

ABSTRACT: *Human populations, rising to unprecedented levels, are the driving force for resource use and the ultimate threat to the integrity of parks and other natural areas. Because the built-in momentum of population growth promises greater impacts, educational programs must promote concepts of sustainability and the necessity of two-child families.*

KEYWORDS: *Population, parks, sustainability.*

Introduction

Bangalore. Lahore. Pusan. Shenyang. Medan. Ahamadabad. Belo Horizonte. Hyderabad. Guangzhou. Wuhan. Kinshasa. What do they have in common? They are among the emerging mega-cities of the world. Each will have 10 million to 12 million people early in the 21st century, yet we are ignorant of them. But they are just part of the changing world. In 1950 only 50 cities in the world held populations of one million or more. By A.D. 2000, there will be such 600 cities.

What has kept us unaware of such profound changes? The transformations of the past century have been great, but those of the coming century will make them seem modest by comparison. The implications for parks and other natural areas is disturbing, for population growth ultimately drives demand for resource use.

Such discussions are often emotionally charged because they touch upon our core values and beliefs. But we are dealing with a paradox. We care about the worth of every individual on Earth. If we forget this, we are lost. But nature reacts to populations. If we forget this, we are also lost.

Beyond Mere Data

The Rule of 72

The Rule of 72 provides a quick way to recognize how fast a population can grow. We can closely gauge the time necessary to double a population by dividing the number 72 by the annual percentage increase. Thus an increase of 4% per year will double a population in 18 years. An increase of 2% per year will double a population in 36 years. An increase of 1% per year will double a population in 72 years. Low percentage increases seem innocuous in our daily lives, but when applied to populations that exist for long periods, they yield exponential growth. Moreover, a small percentage increase will do what a large annual increase will do—it just takes a little longer.

Breaking Distance

Breaking distance recognizes the built-in momentum of reproduction when a population has had a sustained period of high population growth. Even as birth rates are declining, a population will continue to grow for two to three generations because an increasing number of individuals will continue to move into their reproducing years.

Self-Maintenance

In mature ecosystems, including mature human systems, more than half the available energy must be devoted to self-maintenance rather than to increased numbers. Why? Because the Second Law of Thermodynamics dictates it. Everything deteriorates. Energy must be directed to maintain what exists. For human populations this means maintenance of infrastructure, social systems, and individuals.

Our History

For centuries, high fertility was essential to counter brutally high mortality rates. Reproduction had to be near the physiological limit for groups to survive. Under these conditions population growth was about .001% per year. But modern science broke the mortality pattern, and life expectancy at birth rose rapidly from 30 to 40 then 50 years, and 70 years and more by 1960. In effect, the ability to defer death has allowed human population growth to accelerate. Public health programs now reach even the world's most remote villages, but birth rates remain high in much of the world. This disparity began to create the demographically divided world we live in today. The human population grew imperceptibly at first, then more rapidly. By A.D. 2000, 200 million to 300 million people may have lived on Earth. That number grew to 650 million by 1650. It took only 200 more years to reach a population of 1 billion in 1830; 80 years more—to about 1930—to reach 2 billion; and 40 years to double again to 4 billion—a level reached in 1975. Now we stand at 5.6 billion. The

United States population grew from 76 million in 1900 to 249 million in 1990 to an estimated 268 million in 1996.

Such increases are readily grasped when presented as graphics. For example, the population of the U.S.–Mexico border region, including those U.S. counties and Mexican *municipios* contiguous with the border, grew from 1,122,800 in 1930 (Figure 1), to 3,941,600 in 1960 (Figure 2), to 9,341,600 in 1990 (Figure 3). This population, essentially 500 years in the making, will double again in 22 years.

Our Condition

In the American Southwest, the consequences of population growth in a terribly arid land have been profound, particu-

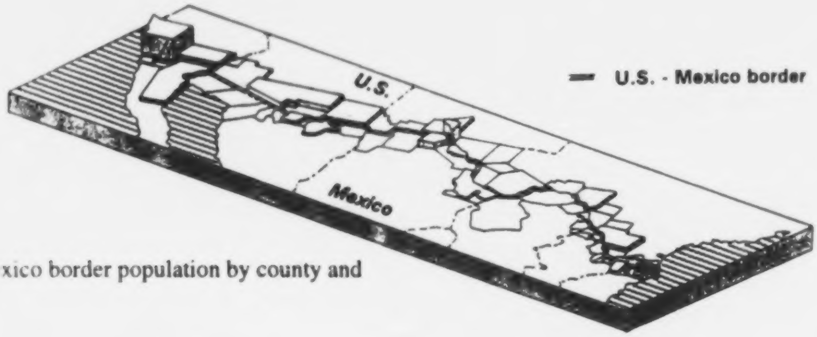


Figure 1. U.S.–Mexico border population by county and *municipio*, 1930.

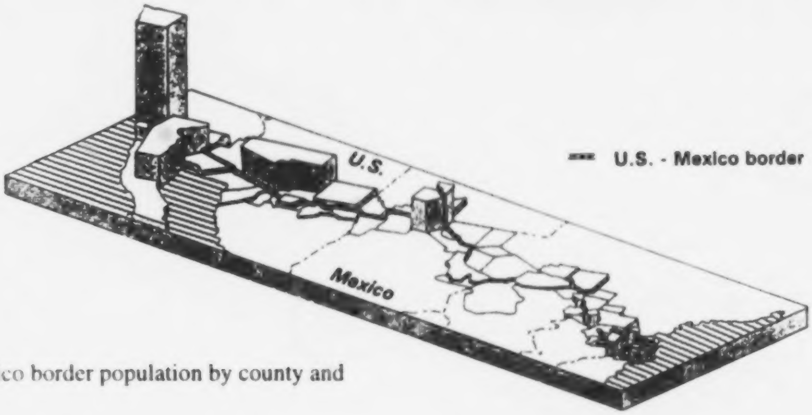


Figure 2. U.S.–Mexico border population by county and *municipio*, 1960.

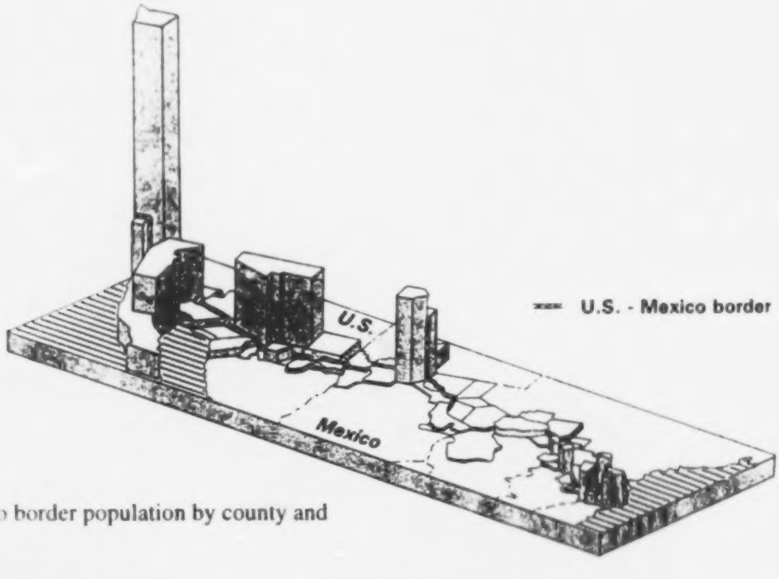


Figure 3. U.S.–Mexico border population by county and *municipio*, 1990.

larly for the river systems. The conditions will continue to be exacerbated, because the United States does not live in isolation; its future is tied to the world, and to the future of Mexico, whose growth rate continues at a high level, despite family-planning programs.

Impoundments, water withdrawals, and degradation of water returned to the rivers has been great. The activities have reduced water flows, altered estuarine ecosystems, and reduced stream productivity, impeded sediment transport, increased stream erosion, and caused flooding of resources. They have degraded water quality by reducing oxygen levels, altering temperatures, and introducing nutrients, toxic wastes, and pathogens hazardous to people. Only in the wettest years does the Colorado River reach the Gulf of California. A proposal has been made to intercept the last of the water of the Rio Grande reaching the Gulf of Mexico.

Every federal park within the Rio Grande watershed has had direct or indirect impacts. And because more than half the water of the Rio Grande comes from Mexico, the impacts will increase as water is diverted to meet the basic needs of people. Big Bend National Park will receive the most conspicuous impact; 80% of the water flowing through the park comes from the 30,000-square-mile Rio Conchos watershed in Mexico. Within our lifetimes, the riverbed within Big Bend will likely become dry part of the year due to continuing diversions.

How Big Will the World's Population Become?

The World Bank predicts human populations will stabilize at 12.4 billion. The United Nations predicts stabilization at 14 billion. The current world population growth rate of 1.56% per year is down from 1.75% per year in 1986, but thanks to exponential growth this still results in a doubling time of 45 years.

Our Future

Smaller family size has helped to reduce the growth rate for the United States to 0.8% per year, but even this translates into a doubling time of about 75 years, which, if sustained, means the nation will reach a population of 500 million people by the middle of the 21st century. Half the growth comes from immigrants and their offspring, and as a result there is *no* envisioned level at which the population of the United States will stop growing. Immigration pressures will continue to increase; 94% of the worlds population increase between the 1990s and 2025 will occur in developing countries. In addition, about 23% of the world's population is living in absolute poverty, and will continue to do so. For these people, migration is often the way to find a better life. One-fifth of humanity is now moving out of its homelands in search of better conditions.

Conclusion

If national parks and monuments and other public lands are to survive with any semblance of environmental quality and integrity, land managing agencies must nourish public understanding that a sustainable society is possible only if its population is stable. The concepts of population dynamics and consequences of population growth must be woven wide and deep into the educational programs. Americans must come to understand that having more than two children is socially and environmentally destructive. But it must also communicate the responsibility of individuals to help create sustainable societies around the world. Without global sustainability, national sustainability or the sustainability of parks is impossible. The welfare of parks is linked to the most perplexing and persistent problems of the world—poverty, injustice, and social conflict.

In the century and a quarter of public land management, we have had our trials, but our trials have just begun.

Visual Communication

I write in a deliberately outrageous or provocative manner because I like to startle people. I hope to wake people up. I have no desire to simply soothe or please. I would rather risk making people angry than putting them to sleep.

—Edward Abbey, 1988

HABS: ARCHITECTURAL DOCUMENTATION FOR RECORDATION AND INTERPRETATION

Catherine C. Lavoie, Historian
Historic American Buildings Survey, National Park Service
P.O. Box 37127
Washington, D.C. 20013-7127

***ABSTRACT**: Following an historical overview of the Historic American Buildings Survey, I will discuss how HABS has expanded to meeting the changing demands of the field and present examples of how our documentation is used for restoration and interpretation.*

***KEYWORDS**: Architecture, history, culture, documentation.*

HABS Then

The Historic American Buildings Survey, or HABS, is the oldest federal preservation program in existence, and its extensive documentation of historic structures is regarded among the nation's premier architectural collections. Documentation consisting of measured drawings, written history, and large-format photography, exists within HABS on over 30,000 structures. It had long been the dream of architects within the American Institute of Architects (AIA) and the National Park Service (NPS) to create an archive of America's Historic Architecture. Then, in November of 1933, President Roosevelt initiated the Civil Works Administration and a call for proposals for make-work programs went out. Charles Peterson, a landscape architect working in the NPS's Eastern Office of Design & Construction, seized the opportunity, immediately submitting a proposal to temporarily hire up to 1,000 architects to document historic architecture nationwide.

Although the federal government was more impressed by the hiring opportunities presented by Mr. Peterson's proposal, those instrumental in its establishment appreciated its more far-reaching goal, that of creating a lasting archive of American's vanishing architectural heritage. According to Peterson, the selection of structures was to represent a "complete resume of the builders art...structures of all types from the smallest utilitarian...to the largest and most monumental." These primary materials, which included molding profiles and other period architectural details, could then be used for the restoration and preservation movements just beginning in places like Colonial Williamsburg.

Although Colonial architecture did feature prominently, such as the connected farm complexes of Massachusetts, the initial HABS experiment also recognized building types less familiar to the American public such as Acoma Pueblo in New Mexico. While many of the structures documented represented the finest in American architecture, in accordance with Peterson's philosophy, a large portion of the documentation was of more fragile vernacular buildings and outbuildings. The documentation of such sites as "The Forks" illustrates both the high style and vernacular in its recording of the southern, Greek Revival plantation house and associated outbuildings, including an "Old Slave House." Structures, such as lighthouses, mills and other industrial type buildings were also documented by HABS in the decades before the establishment of our companion program, the Historic American Engineering Record, or HAER, in 1969.

In the process of documenting architecture, HABS also documented the end of an era. Depression era poverty served to delay "improvements" to our nation's architecture. Advances in technology, construction or otherwise, in the decades following the depression and World War II would change the face of American life and, subsequently, its built environment. Thus, much of the 1930s HABS documentation reflects a bygone era.

The early documentation was produced by field teams located in various states throughout the nation. The program was coordinated by the central office in Washington, D.C., through District Officers, AIA local chapter nominees. Among other things, the District Officers were responsible for assembling a local advisory committee to compile lists of the buildings to be documented. The criteria for selection included age (before the last quarter of the 19th century) architectural and historical interest, and local significance, with priority given to endangered buildings. The Lyles House in Maryland, one of the oldest houses in Prince George's County, illustrates the type of regionally significant, threatened architecture that led to the formation of the program. It was documented by HABS in the 1930s as it began to sag and revisited in the 1990s with only the end walls standing.

HABS was conceived and operated as a seat-of-the-pants operation; architects were required to supply their own equipment and work out of public buildings or donated space. NPS supplied paper, pencils, ink, and other perishable supplies. The 1930s drawings are easily recognizable due to their careful attention to detail and the denseness of each sheet, presumably in the interest of conserving supplies during the lean years of the 1930s.

History, however, was not always a component of the early documentation; architects often, but not always, recorded pertinent information to accompany the drawings and photographs. They were requested to record in the field notebook "Facts regarding the history of the building within the knowledge of the occupant." It was further stipulated that, "Such notes will be confined largely to dates, the names of architects, builders and original owners, important historical events that took place on the premises and other pertinent data."

HABS Now

While the basic philosophy behind HABS documentation remains, the scope of the program has expanded since the 1930s. As architects returned to work in the post–World War II years, the program turned to young professionals. Beginning in the 1950s, summer teams consisting of university students pursuing degrees in architecture, architectural history, and other related disciplines undertook recording projects working under the direction of trained professionals. While intensive hand measuring and drafting is still the backbone of the drawings program, in more recent years computer-aided drafting (or CAD) is used to record larger, more monumental structures, or those possessing uniform or repetitive details. With electronic CAD files, changes can easily be made to the drawings, making them an invaluable facilities management tool. HABS also uses photogrammetry, perspective corrected photographs from which drawings can be produced, to accurately capture and reproduce ornamental detail.

Although it was originally assumed that buildings erected after circa 1865 might not be "of a character worth recording," HABS has since come to recognize the contributions of the Victorian era and early twentieth century styles. One noteworthy example is the 1874 Mark Twain House in Hartford, Connecticut, home of noted American author and humorist Samuel Clemens and his family. The house, designed by Edward Tuckerman Potter and Alfred H. Thorp, is a stunning example of the eclectic, Continental Picturesque style favored by the well-to-do from the late 1850s through the early 1870s. The family lived here from 1874 until 1891, during which time Samuel Clemens wrote a number of novels now recognized as classics of American literature. HABS documentation was undertaken as part of a reexamination of the site and in the interest of broadening the interpretation to include the combination carriage house and coachmen's apartment. In so doing, information was gathered to profile the lives of the coachmen and his family and their relationship with the Clemenses, and to determine how the spaces within the apartment and carriage house were used and how that use changed with each subsequent owner. Similar investigation was applied to the house. Because a great deal was known regarding Twain's literary career, the report focused on other aspects of significance such as the family's domestic life, endless redecorations—including decorative treatments undertaken by Louis Comfort Tiffany and his firm Associated Artists; on social aspects such as the influence of his Nook Farm neighbors Harriet Beecher Stowe, Charles Dudley Warner, and suffragist Isabella Beecher Hooker; and on analyzing the architectural form of the structures.

Landscapes have also been the subject of recording efforts, with such examples as Meridian Hill Park in Washington, D.C., and, most recently, Fairmount Park in Philadelphia, one of America's oldest urban parks. The range of landscape documentation has broadened to include such sites as Laurel Hill Cemetery in Philadelphia, the second oldest rural garden cemetery in America, as well as urban landscapes, such as the L'Enfant Plan for the City of Washington, and Monument Avenue in Richmond, Virginia, one of America's premier examples of urban planning in the form of the residential boulevard.

HABS recently undertook a Cultural Landscape study within Valley Forge National Historical Park in Pennsylvania, the site of General George Washington and the Continental Army's 1777–78 winter encampment. Whereas past preservation efforts have traditionally focused on the buildings alone, overlooking the surrounding landscape, cultural landscape studies examine the larger context of the natural and built environment. The study, which focused on the immediate area around Washington's Headquarters, was undertaken in an effort to better understand and interpret the Valley Forge site. The park was first established in 1893 by the commonwealth of Pennsylvania, but in the intervening years from 1777 until 1893 many changes had taken place. From Isaac Pott's small mill, visible from Washington's Headquarters in 1777, a larger milling operation had sprung forth, including two mill complexes, workers' housing, warehouses, and other ancillary buildings. In their attempts at restoring the area to the encampment period, the Valley Forge Park Commission had removed these buildings, thus removing subsequent layers of history we now seek to comprehend.

In undertaking the study, HABS re-photographed a select group of historic views. Computer aided drafting was used to produce period site plans of the Washington's Headquarters area at various turning points in its history; during the encampment in 1777–78, at the close of the mill village period circa 1893, and at the time it became a national park in 1976. The dimensions were derived from historic maps and sketches, and information attained from historic photographs and archeological reports. The photographic views, covering a time span of approximately 130 years, and period site plans will be used to examine the larger continuum of history at Valley Forge. By so tracing the evolution of the cultural landscape, the park hopes to gain insight into the current site, thus bringing a broader perspective to the interpretation of Washington's headquarters.

HABS History

As with the fields of architectural history and historic preservation in general, HABS histories have expanded to answer more far-reaching questions posed by an increasingly more knowledgeable audience. Because the drawings and photographs reflect existing rather than original conditions, it is the job of the historian to document changes in the original fabric of the building which will aid in the restoration or interpretation of the structure. Although the structure itself conveys much information, the historian is asked to examine it not merely as an artifact, classifying it according to appropriate architectural style, but to relate the larger context in which the structure or site was created and subsequently developed, as well as important persons and events associated with it. Factors that may have influenced the design range from geography and building technology, to regional or national trends in architecture, to the social position and other influences of its owners.

Although architectural significance has generally driven the selection of structures to be recorded, HABS has examined numerous sites where historical events, and the social implications of those events, vastly outweigh architectural merit. Such was the case with the recording of the Monroe School in Topeka, Kansas, involved in the landmark, 1954 Supreme Court case, Brown vs. the Board of Education, and with Manzanar, a World War II Japanese-American internment camp in southern California. Both were new NPS sites in which HABS was asked to produce documentation to be used in developing restorative and interpretive plans.

For more than sixty years, the HABS program has helped to shape the historic preservation movement by setting standards for recording historic structures and by providing baseline information for restoration and interpretation. In addition to providing a lasting, publicly accessible record, the documentation also serves to promote the preservation of historic architecture by creating an awareness for such sites, and the research needed to justify its protection. By addressing both the architectural and historical context of significance, HABS documentation can provide interpreters with written text to convey to visitors a multifaceted and compelling story, and high-quality drawings and large-format photographs to be used in promotional brochures and other publications. In an effort to better fulfill its mission, HABS will continue to expand in scope to record and interpret successive generations of historic sites so that, as the founder Charles Peterson intended, "A complete picture of the culture of the times as reflected in the buildings of the period can be put on record."

HAER: ENGINEERING DOCUMENTATION FOR INTERPRETATION

Richard O'Connor, Historian
Historic American Buildings Survey/
Historic American Engineering Record
P.O. Box 37127
Washington, D.C. 20013-7127

ABSTRACT: *The Historic American Engineering Record documents cultural resources central to the basic themes of American history. Written histories, ink-on-mylar drawings, and large format photographs are developed by teams of historians, architects and photographers as part of a permanent collection at the Library of Congress.*

KEYWORDS: *Engineering, industry, documentation, technology, science, parks, heritage.*

Introduction

The Historic American Engineering Record (HAER) was formed in 1969 to complement the Historic American Buildings Survey (HABS), a WPA agency chartered in 1934 to document historic architecture—primarily houses and public buildings—of national or regional significance. The Engineering Record reflected, in historian Don Sackheim's words, "A growing nationwide awareness of the importance not only of the elegant mansion, but also of the factory which paid for it; not only of the antique street lamp, but also of the commercial gasholder which supplied it; not only of the picturesque railroad station, but also of the bridge which led to it and the shop facilities which supplemented it." Recognizing the fragility of our national industrial and engineering heritage, the National Park Service, the Library of Congress and the American Society of Civil Engineers (ASCE) formed the Historic American Engineering Record to document nationally and regionally significant engineering and industrial sites. A short while later, HAER was ratified by the American Society of Mechanical Engineers, the Institute of Electrical and Electronic Engineers, the American Institute of Chemical Engineers, and the American Institute of Mining, Metallurgical and Petroleum Engineers.

HAER prepares documentation of significant engineering and industrial sites and processes in three formats: measured drawings, large-format photographs, and written histories. Depending on their degree of significance, prospective sites may be documented in all three formats, or in any combination. Traditionally, documentation has been carried out by field teams staffed by professional and student historians, architects, engineers, and photographers during the summer months. Historical reports are based on primary sources, including company and engineering records, archive materials, government documents, and oral histories. Ink-on-mylar drawings, based on existing engineering drawings verified in the field, and on actual measurements where necessary, both record current conditions and interpret processes. Former HAER architect Richard Anderson has observed that "frequently the significance of a site lies as much in the industrial process going on inside the building as it does in the buildings themselves or their machinery." Large format photographs provide a stunning record of the site "as-is." Documentation is prepared on archivally-stable materials and stored in the HABS/HAER Collection in the Prints and Photographs Division of the Library of Congress, where it is available to the public.

Documentation produced by the Engineering Record should be of value to interpreters working at sites of local, regional or national importance. Large-format photographs, usually 5 x 7, both black-and-white and color, record a site's "as-is" condition from both grand perspective and detail views. Histories explore a site's origins and development, looking closely at the decline of old technology and the evolution and implementation of new ways of doing things. Drawings represent aspects of the site, such as its mechanics and the "inner-workings" of its equipment and processes, that cannot be captured on film and with much less impact in words. All three forms of documentation are richly interpretive, working from the remains of the material culture to develop an understanding of the site and its meaning in the lives of the people who lived and worked around it.

Cultural resources documented by the Engineering Record have contributed to our understanding of events and movements central to American history. Most of HAER's work focuses on sites significant in the history of science and technology, looking at the nature of innovation, the specific ways technologies have been implemented, and the theoretical background of scientific and technological achievements. Rather than narrowing its potential value to interpreters, however, this focus is really the documentation's strength, precisely because these sites play critical roles in American development. They relate directly to the American economy, helping to explain and place in broader context complex patterns of resource extraction, manufacturing processes, product distribution and consumption, labor markets and labor organization, and the role of governmental policies and practices. Equally important, the history of science and technology underpins our understanding of the way we have transformed the environment by manipulating, using and, at times, abusing its resources. Similarly, science and technology, in their relationship to industry, the economy and the environment, provide context for issues central to the juxtaposition of people and place: migration patterns, the development of communities, and the clash of cultures. Ultimately, HAER documentation can tell us much about how we express our values through our material culture. The rest of the paper will develop these themes in more depth using HAER projects as examples.

The Road Systems of the National Parks
One of the largest projects HAER has undertaken in recent years is the documentation of the roads and bridges of the national parks. Begun in 1988 and still on-going, this multi-year project expects to produce, upon completion, comprehensive historical reports, measured and interpretive drawings, and large format photographs on the road systems of sixteen major parks throughout the United States. A major exhibit and a book synthesizing the Park Service's road design and construction experience are planned. The Parks Roads and Bridges program is a partnership effort of several NPS entities: the Engineering and Safety Division, various regional offices, and the individual parks themselves, and the National Highway Administration.

The road systems in the national parks represent some of the earliest and most sophisticated highway engineering efforts in the country, and reflect one way that we have exercised our stewardship over our natural resources. Yellowstone's first road system was conceived in 1872 and the first leg constructed shortly thereafter, Yosemite's Wawona bridge was built in 1868; at Zion National Park the roads system followed Indian foot trails and the paths of Spanish explorers and Mormon settlers; and, of course, the road systems of Acadia are essentially the carriage and auto roads of Mr. John D. Rockefeller. The NPS, since its inception, has followed a policy that road systems and other structures should "lie lightly on the land." Designed to provide access to, and mobility within, the resource, rather than quick transit from point A to point B, the roads, in the words of historian Christina Slattery, "follow a path dictated by scenic and historic interest rather than topography" (General's Highway brochure). To that end, native stone for masonry arches and retaining walls was generally quarried or "borrowed" from sites out of view of the roadways; tunnels were dug in part to hide roads from their surroundings; and bridges used native stone and timber to disguise structural steel and concrete, as did park buildings.

Road design and construction reveal the different ways that government policies and practices shaped the landscape. Since 1925, the NPS and BPR (now the Federal Highway Administration) have collaborated on park road systems. This unique partnership brought state-of-the-art highway design to the park system at precisely the time, in the words of historian Michael Anderson, "when road building emerged as an art form in tune with the landscape" (Southwest Circle Tour Roads and Bridges). A very different interpretation of government policies and practices emerged over the planning of Rock Creek and Potomac Parkway in Washington, D.C. There, critical decisions were made only after much debate among Congressional commissions, city and local citizens groups over a variety of issues, from proposed routes to questions of tunnels versus open parkways.

The Industrial Heritage
The Engineering Record's strength in the history of science and technology is an ironic artifact of the timing of its creation and its mission to record America's engineering and industrial legacy. As mills and steel plants closed and production moved overseas, landmark bridges succumbed to new designs with greater payloads, and railroads abandoned their rights of way, freight yards, repair shops and passenger stations in deference to America's infatuation with the internal combustion engine, preservationists responded with a program to create a permanent record of sites they might not save. For twenty-six years, HAER projects in America's industrial heartland have established a wealth of written and graphic documentation of industries that once drove the world's strongest economy.

As the HABS/HAER collection demonstrates, the Engineering Record did not emerge in a vacuum, and no mere coincidence made it a partner of the Buildings Survey. Until 1969, HABS faithfully recorded industrial and engineering structures that fell far from its original mandate. Many of these, like covered wood bridges, were rare survivors whose loss without a surviving detailed record of their design and construction would eradicate an entire chapter of our engineering heritage, one with a decidedly regional flavor. Others, like textile mills and railroad terminals, were the first casualties of America's most recent industrial transformation, and it was their very destruction that awakened the preservation community to the need for a concerted effort, at the very least, to record the details of their existence.

Building on the Mohawk-Hudson River Survey and the New England Textile Mill Survey that documented significant sites then in decline and facing impending demolition, in the late 1980s and early 1990s the Engineering Record began multiyear recordings in central/southwestern Pennsylvania and north-central Alabama. Heavily industrialized regions on the Appalachian chain, they share similar backgrounds in resource extraction and primary metal production but display widely varying regional characteristics. Both are in the process of interpreting their industrial pasts to become heritage areas in the future.

HAER's recording of coal mining and coking production, and the iron and steel industries of which they were an integral component, documents significant developments in the history of American industry, the rise of America to world industrial leadership, and the relationship of industry to the environment. Coal was central to the industrial development of both the Pittsburgh and Birmingham regions. Massive deposits of high-quality bituminous coal were readily accessible in outcroppings throughout both regions, although two areas in particular—Fayette and Westmoreland counties in Pennsylvania and Walker county, Alabama—held the largest reserves. This coal was most valued not for its direct use as a fossil fuel, but for the high quality metallurgical coke it produced when slowly carbonized. The Connellsville coke region in western Pennsylvania was the world's premier metallurgical coke producer. Dominated by Henry Clay Frick, the "coke king," by the mid-1880s most of the beehive ovens in the region (numbering 30,000 by 1909) had become part of Andrew Carnegie's steel empire. In Birmingham, HAER's documentation of the Thomas byproduct plant, eventually part of Republic Steel, records not only coke production but also the distillation of waste gases into valuable byproducts such as coal gas, tar, ammonia, light oil, and naphthalene—chemicals essential to modern manufacturing industries. The transition to byproduct coking eliminated the outright contamination of the surrounding area by toxic sulphur-laden gases, a milestone in the cleanup of steel-region environments.

The Engineering Record documented the coal and coke industries as part of its comprehensive recording of the iron and steel industry. Both Pittsburgh and Birmingham have been leaders in the production of iron and steel, and each have made significant technological contributions to the metals industries. Under the leadership of Carnegie and then U.S. Steel, piants in the Pittsburgh region drove the steel industry to record production. HAER has recorded technologies critical to that development: the materials handling system that became known as the "Duquesne Revolution," and the 12,000 ton press at U.S. Steel's Homestead Works Press Shop No. 1, a major armor producer for the American military. Unlike the Pittsburgh region, Birmingham's native iron deposits were high in phosphorous and led to the development of a vibrant foundry industry, but considerably less steel production. HAER's documentation of the region's cast iron pipe industry focuses on the multilevel relationships between technological innovations in pipe production and the growth of cities, of which the water and sewer infrastructures are vital components.

Historians writing for HAER have explored topics critical to understanding the relationship's between technological change and jobs. In Birmingham, the massive migration of African American workers to opportunities in northern cities hastened changes in blast fumace technology and materials handling at Sloss Furnaces. At Jeannette, Pennsylvania, innovations in glass melting technology reshaped the division of labor in the window house, paving the way for the displacement of skilled glass blowers and gatherers by cylinder machines. Both Sloss and the window glass plant have since closed.

The HABS and HAER have collaborated to more fully document the human and cultural dimensions ofAmerica's industrial development. In Johnstown, Altoona and Jeannette, Pennsylvania, the brick making towns of the state's Gannister district. and the coal patches of the gas-coal belt, the Buildings Survey has recorded homes of industry magnates and workers, fraternal halls and churches, while the Engineering Record concentrated on industrial dimension. The result of such collaboration is a deeper understanding of the processes.by which places are "peopled," social institutions such as labor unions, fraternal associations and religious institutions are developed, and, ultimately, how these cultural expressions are linked to the economic and industrial foundations of the communities.

Dams and Hydroelectric Power

Probably few engineering projects represent our desire to manipulate and control the environment as the harnessing of the power of our rivers, streams, and lakes. HAER documentation of these civil works suggests the range of this interaction with the environment. The races that diverted water power to drive the wheel, shaft, and belt systems of the early textile mills, grist mills and iron furnaces provided one such context, while the massive dams and hydroelectric plants of the Tennessee Valley Authority, such as Wilson dam at Muscle Shoals, Alabama, and those on western rivers, like the Skagit in Washington State and the Grand Coulee, currently being documented, represent another. In addition to their environmental impact, documentation of these structures illustrates marked changes in the science and technology of power generation and the complex political relationships involved in massive public works projects.

Transportation

Recording historic bridges has been a special project of the HAER. Over the long term, materials and methods of bridge construction reveal the evolution of engineering principles and profound changes in our understanding of the science and behavior of construction materials. Following HABS documentation of covered wood bridges prior to the establishment of the Engineering Record, HAER has applied both topical and inventory approaches to recording historic bridges. In Oregon, the approaches were combined in a statewide inventory that paid particular attention to the concrete bridges of noted engineer and designer Conde B. McCullough and the lift bridges of J.A. Waddell. The Massachusetts historic bridge inventory recorded stone and reinforced-concrete arches, timber trusses, cast- and wrought-iron trusses, and suspension and swing spans. In Ohio, Pennsylvania, West Virginia, New York, and New Jersey, a topical approach has focused on historic cast- and wrought-iron bridges.

In addition to bridges, the Engineering Record has documented other significant aspects ofAmerica's transportation history. Again, following on the work of the HABS, which recorded railroad stations and depots, HAER has recorded entire railroads and shop complexes. One of the most comprehensive projects recorded the East Broad Top railroad in central Pennsylvania, the last surviving narrow-gauge railroad in the eastern United States, and included over twenty detailed drawings of the still-extant nineteenth century shop complex. Canals, and the locks and dams that made rivers navigable, have also received attention, including the production of a documentary video of a lock and dam on the Monongahela River for the Army Corps of Engineers.

Conclusion

The documentation of engineering and industrial sites goes well beyond the obvious topics of science and technology to touch in critical ways on broader themes shaping America. The development of the American economy, the transformation of the environment, the expression of cultural values, the "peopling of places," the creation of social institutions and movements, and the shaping of the political landscape all relate in some way to the expansion of science and technology. And our understanding of these broader themes expands as we learn more about our engineering and industrial heritage.

References Cited

Anderson, Richard K., et al. 1995. *Recording Historic Sites & Structures for the Historic American Engineering Record.* U.S. Department of the Interior, National Park Service, HAER.

Croteau, Todd A., et al. 1990–5. *Highways in Harmony: Roads and Bridges in the National Parks.* Brochure Series. U.S. Department ofthe Interior, National Park Service, HABS/HAER.

INTERPRETIVE SIGN DESIGN: PITFALLS AND COMPLICATIONS OF GOING IT ALONE

Jane M. Rohling, Interpretive Program Manager
Wallowa-Whitman National Forest
88401 Highway 82
Enterprise, OR 97828

Mary L. Jahn, Owner
Jahn Studio Graphics
204 North Meadow
Grangeville, ID 83530

Dick Ostergaard, Interpretive Team Leader
San Juan National Forest
701 Camino Del Rio
Durango, CO 81301

ABSTRACT: *If you're about to get started on an interpretive sign project and are contemplating doing the layout and design on your own instead of contracting the work to professionals, you should be aware of some of the complexities of the task before making your decision. This session should help interpreters make informed decisions about their own knowledge, skills, and abilities, and prepare them to work successfully with professional designers and fabricators as well.*

KEYWORDS: *Wayside signs, interpretive panels, computer graphics, computer design, graphic arts.*

Introduction

The advent of the personal computer has greatly changed the graphic arts industry, allowing people with little or no background in art or design to use computers to lay out newsletters, signs, etc. which exhibit some degree of professionalism. Interpreters have been quick to take advantage of computer technology to design publications, exhibits and signs in-house. If the interpreter(s) in question have strong design skills, the results can be quite professional, however, having a computer and knowing how to use graphics software does not make one an artist or designer. Basic layout and design skills may be able to be learned through on-the-job training, and subsequently applied to interpretive projects, but this takes time and effort on the part of the interpreter. In addition, there are many technological aspects that are unique to various fabrication processes and materials that interpreters with even above-average knowledge of graphic arts may not be aware of. It is these technological details that can become overwhelming obstacles to an interpreter who chooses to become a "do-it-yourself" sign designer.

The goal of this session is to provide you, the interpreter, with some information that will help you assess your design knowledge and skills before you decide whether or not to tackle an interpretive design project on your own. Whether you decide to go it alone or contract with professionals, this information will help you avoid some of the pitfalls and complications that can crop up in any design project.

Planning

It is important to work from a solid interpretive plan, and to get the rest of the staff (recreation managers, archaeologists, geologists, biologists, range, fire, and timber specialists, etc.) involved in the development of the plan early in the project. This ensures that you are focused on interpretive themes that are important to the resource managers as well as interesting to the public. It is also very important to develop a strategy for accomplishing the work that solicits input from appropriate staff, but that limits the number of reviews. Put this process in writing and discuss the policy with your co-workers up front! Decide in advance who has the final say on any conflicts you may have trouble resolving with other reviewers.

Once you develop your interpretive plan, it's time to reconcile your dreams with the budget. You can get ballpark estimates for sign fabrication by providing some general information to interpretive exhibit design firms. The hard part is estimating how much time the work will require—a crucial factor if your project budget has to cover your salaries, too. Be sure to include administrative time involved in coordination, budget reviews, etc. About 9 to 12 days per sign seems to work pretty well for all the research, text writing, illustrations, etc. Also, be sure you are considering all the overhead to cover the costs, including equipment, facilities, health insurance, etc. What does your time (including benefits, annual leave, and sick leave) actually cost your employer? Will it take you longer to do the job because you are learning as you go? Will this learning curve be offset by the fact that you anticipate having numerous future projects in which the skills you learn will be helpful? Or is this likely to be the only interpretive sign project you'll ever do, making your learning process very expensive for your employer? Doing an interpretive sign project in-house probably won't be *less* expensive than contracting the work out, but hopefully, the cost will be comparable. You could even end up with a better product because of your familiarity with the subject mater to be interpreted, and your access to important people and resources.

Assess your knowledge, skills, and capabilities (in terms of personnel and equipment) before deciding whether or not to tackle a project in-house. Realize that it doesn't have to be an all-or-nothing decision. Many professional interpretive designers will work with you, allowing you to do whatever portion of the project you feel able to do on your own (research, text, illustration, etc.) and taking over from there. The nice thing about this arrangement is that, once you decide on the general parameters of the project, you can go ahead and put together contract specifications for the portion of the project you want to contract out. Once the contract has been awarded, you can get input along the way from the people who will be taking the project to completion, ensuring that the portion of the project you are doing will meet their needs (i.e., computer files will be compatible, the artwork you have designed will be reproducible in the media you have chosen, etc.).

Contracting and Contract Specifications

Writing thorough contract specifications forces you to state very clearly what you plan to provide and what you are contracting the other party (or parties) to do for you. Be very specific: this will help ensure that the product you pay for is the product you envisioned. Be sure to include the following:

1. Outline the timeline for completing the project, and tie any partial payments to the completion of specific stages of the work.

2. Outline the review/approval process you will use while the work is in progress and upon completion of the work. Reviews at 25%, 50%, and 90% work well.

3. State clearly what you will provide and what you expect the contractor to provide.

4. If you plan to provide any computer files, state what format you'll be using (Mac or PC), what software you'll use, and who's responsible for solving file translation problems that occur.

5. Indicate whether or not you'll require proofs to look at during any stage of the production process, and if so, in what format and what size. Do you want to see ink/porcelain color chips?

6. Clearly identify who will own the film, artwork, computer files, etc. and state where these items will be stored when the project is completed.

No matter how much of the job you intend to contract, be sure to use experienced professionals. While it may appear to be less expensive to hire someone who might just do a little of this type of work "on the side," in the long run it can cost you time, money, and endless headaches and result in an unprofessional product. Just because someone has written books, magazine articles, or research papers, it doesn't mean they are capable of writing good interpretive text. Just because someone has a Mac or PC and knows how to use graphics software, doesn't mean they're a good designer or illustrator. And just because someone has been an interpreter for many years it doesn't necessarily mean they are skilled in exhibit or sign design. Don't be afraid to ask for samples of past work and check references!

Computer Design and Software Issues

Most of the graphic arts industry today relies heavily on computers. This doesn't mean you can't do things the old fashioned way—in fact, a good point to keep in mind as you work through every project is that *sometimes* the old-fashioned cut-and-paste procedures are still the easiest way to get the job done! However, if you are going to tackle very many layout/design projects, you'll be ahead if you have a *good* computer system and some *good* graphics software to work with. What is *"good?"* That depends on how much of the project you decide to tackle. As a rule, Macintosh is still the standard for most of the graphic arts industry, so we recommend Macs if you have a choice.

For the sake of discussion, we'll assume you intend to do the entire layout and design for several interpretive panels on your own computer system. Remember, graphic files and software can be very large, so both your RAM and hard drive space are crucial. We'd recommend a *minimum* of 16 to 24 MB RAM (more is even better) and a 500 MB to 1 GB hard drive. You will want some sort of backup system (tape, removable cartridges such as Syquest or Bernoulli, or the popular new Zip drives with their small 100 MB disks), which will also make sending large graphics files to a contractor very convenient. This is also a great way to archive projects for future use.

You will want a decent laser printer, but since your fabricator will most likely end up running everything through an imagesetter and outputting things to film at a very high resolution, you can get by without super high resolution. A color printer will tell you very little about what the color will look like in your final product, so don't feel you need one. A well-calibrated 17" or larger color monitor *is* critical, however. You will also benefit greatly from having a scanner, although you can have artwork scanned and put on disks for you by a service bureau. Be sure you provide the contractor with a good clean file (with no unusual little glitches that may cause them problems), and send along all linked files such as scanned artwork, fonts (both screen and printer fonts), etc. Try to stick with fonts from well-known software companies like Adobe or Bitstream. Others can cause translation problems. Do some research on software to see what is most commonly used by the contractor(s) you are likely to work with. QuarkExpress, Aldus PageMaker and Freehand, and Adobe Illustrator are some of the best layout software programs. If you haven't already purchased software, you might benefit by awarding your contract for the portion of the work you'll be turning over to someone else and then discussing software preferences and file formats with them.

Photography
The most important aspect to stress about photography is that you should know what makes a good photograph: composition, color balance or black-and-white tones, exposure, and sharpness of the image are all important. If you aren't familiar with how to judge these elements, consult someone who is. Too often poor photographs are used in exhibits and signs, even when better ones are available, simply because the person making the selection was not familiar with basic photographic principles. Beyond this, here are a few points to remember in selecting photos for exhibits or signs:

1. Use the largest format transparency/negative you possibly can.

2. Make sure the image is in sharp focus—*always* view negatives or slides with a magnifier!

3. Always get photos *custom printed*. If the actual photo will be part of the sign or exhibit, be sure it's on the most durable, archival materials available, with UV protection.

4. If you use color transparencies, use only *originals*.

5. In most cases, photographs with fairly even contrast are best.

6. Make sure the photo's composition will work at the image size to be used in the exhibit.

7. Be sure you have the proper releases for any copyrighted photographs, or photos with recognizable people in them, and credit source if necessary.

Artwork/Illustrations
As you prepare artwork for interpretive panels, it is important to consider the media for which you are designing. Know how line art, paintings, or other illustrations should be prepared so that they will translate well in the final production process (to film, as screen prints, as digital output, etc.). Is line weight, image size, or the size of individual elements in the composition important? For example, if you are using ink drawings with just a few extremely fine lines in some areas and heavy crosshatching to create various degrees of shading in darker areas it can be difficult for the illustration to be transferred to film. If the film is exposed to hold detail in the very fine lines, the darker areas can go completely black. If it is exposed to hold detail in the darker areas, you can then lose the finer lines. Each production process and material has strengths and limitations, and if you understand these factors you can design your artwork to take advantage of the unique characteristics of each. For example, there are the limits on resolution (dots or lines per inch) in each media. This can affect your choice or preparation of artwork or photographs. Generally, original art should be slightly larger than 100%, since the image is reduced about 10% when shot with a camera or scanned. If there will be a protective laminate or covering over your sign/exhibit panel (Lexan, Plexiglass, glass, etc.), how will this affect the appearance? With some materials glare may become a problem, while other materials, such as nonglare glass or fiberglass embedments, may reduce glare but may also obscure fine details or cause a shift in the way colors appear (darker, lighter, yellower). Advance consideration of these potential problems can help minimize their effects.

Color Selection
Understand the different ways the computer creates color (CMYK, RGB) as well as the color matching systems (Pantone, etc.). This is very important in selecting your colors and matching various elements in your project. Use a standard color-matching system like Pantone as your point of reference, because color output can differ greatly in different software applications and in various media. Be aware that colors look different in daylight and with various types and levels of indoor lighting. This can affect the overall appearance and readability of your interpretive panel. A white background in bright sunlight can be blinding to a viewer, while too little contrast between art, text and background can make a sign difficult to read. Certain colors "vibrate" if used adjacent to each other, making reading them difficult (i.e., certain shades of red and blue). Some colors of screen printing pigments or types of ink may fade more readily than others, while other colors are difficult or impossible to reproduce in certain media (i.e., magenta is an extremely difficult color to reproduce in porcelain enamel).

If your color separations are fairly simple, you may be able to provide "camera-ready art," but it would be best to discuss this with your fabricator in advance to ensure that you provide them with what they'll need. If you aren't familiar with such techniques as trapping, it would probably be best to leave the film preparation, including color separations, up to the professionals. However, an understanding of the production process will help you make some design decisions about your use of color. For example, the number of colors you use in your design is an important cost factor in most media. Although the large digital output processes (like 3M Scotchprints) provide relatively inexpensive full-color images, screen printing processes used in fiberglass embedded and porcelain enamel signs have added costs for each (and that includes the background color). There are some ways can you take maximum advantage of using just two or three colors and save money, and it may turn out to be more cost effective to use some hand-coloring instead of an additional layer of screen printing. In doing so, you may actually be able to have several different spot colors instead of just one.

Typography and Text

Typography is a very important element that beginning designers tend to overlook. In an exhibit or interpretive sign, the type is just as important as a graphic element, which enhances and complements the artwork, as it is the vehicle for communicating your verbal message. Carefully chosen fonts and the creative integration of text blocks and graphics can make the difference between an eye-catching message and one that viewers will simply scan and walk past. The same is true of the words you choose for your headings, the length of your text, and the way you break up information into text blocks. An understanding of the basic principles of typography can make the difference between a professional and unprofessional product. A good basic reference is a small book called *The Mac Is Not a Typewriter* (or its counterpart publication for PC users). This inexpensive paperback book by Robin Williams is published by Peachpit Press in Berkeley, CA. Study the difference between display (heading) fonts and body fonts carefully. Understand what makes a font more or less readable. The size, color, and style of the fonts you use are very important to people who are visually impaired. Use fonts to convey the tone of the message and complement the interpretive theme, but don't go overboard. In general, less is more: don't combine more than two or three fonts on a sign.

Text writing for interpretive exhibits and signs is challenging, and many people who are adept at writing for other formats (such as books or magazine articles) are very poor interpretive writers. Be sure to assess your own skills in this area objectively and if you are hiring someone else to do your writing, be sure to ask for examples of *interpretive exhibit text* they have written. Find a writer who can convey the message simply and concisely, while keeping it accurate and interesting. Keep a good style manual on your reference shelf and use it regularly, and *proof, proof, proof!*

Mounting

If your exhibit panel is to be framed, your frame will most likely overlap the front of your interpretive panel, so be sure to allow adequate "dead" space around the edges of your layout (usually 1" to 2"). Certain types of mounting structures may require you to have holes pre-drilled along the flange or the edge of a porcelain enamel panel. These holes must be drilled in the steel *before* any enamel is added to the panel, so include the size, number, and location of the holes in your fabrication specifications. A frame designed to hold the panel without a flanged edge or mounting holes can save money. Your choice of finish, color, and material for the frame can greatly enhance or detract from your interpretive panel, so don't forget to think about this early on in your design process.

Accessibility

This topic is too complex to discuss at length here, however some excellent courses which address accessibility issues specifically related to interpretive programs and facilities are offered by the National Park Service and other agencies. There are also some excellent publications which provide general guidelines for accessibility in interpretive exhibits and signs. A few tips:

1. Choose colors that provide strong contrast between your background, line art, and text.

2. Keep type at 16 points or larger, select fonts with high readability, and don't use all caps.

3. The height and angle of your sign mounting structure are important for people in wheelchairs. Be sure to know the standards for angled, low profile, and vertical sign mountings.

Conclusion

We aren't trying to influence your decision about whether to contract out all or part of your interpretive sign project or do it in-house. We do hope that we have provided you with enough information to adequately assess your capabilities before unknowingly taking on more than you're prepared to handle. We want you to be aware of the learning curve we've been through so you can decide if this is something that you want to go through yourself, knowing it may be, at times, slow, frustrating, and potentially costly. We feel that we have benefitted from the process and have grown professionally, but probably not without some cost to our employers. Overall, however, we are satisfied with the results of our efforts, and feel better prepared to take on future interpretive sign projects, whether we design them in-house or not.

JUST ANOTHER ROADSIDE ATTRACTION? GETTING RESULTS WITH INTERPRETIVE WRITING

Deborah Richie
Avocet Communications
P.O. Box 7943
Missoula, MT 59802

John Grassy
Avocet Communications
P.O. Box 1061
Helena, MT 59624

ABSTRACT: *To write thought-provoking interpretive prose first requires knowing and caring for your subject. Second comes the writing and editing, with attentiveness to active tense, jargon-free language, and an engaging, clear voice. Third: writers should aim to address the pressing conservation, social, and cultural issues of our time. A recent interpretive project in Alaska serves as one model.*

KEYWORDS: *Interpretive writing, thematic, storytelling, comparison, curiosity, passion, Alaska, native cultures, wayside exhibits.*

Know and Care for Your Subject

John Burroughs, an American naturalist (1837–1921), wrote in his essay, *The Art of Seeing*, "What we love to do, that we do well." To that he added, "To know is not all: it is only half. To love is the other half."

Writing successful interpretation requires a passion for the subject. That doesn't mean you have to be an expert or even a resident of the place you interpret. You need only be willing to immerse yourself in the project. Don't dabble at the edge of the lake; dive in and explore the depths.

Avocet Communications of Montana recently trekked to Alaska to create a series of 16 interpretive displays for Alaska State Parks along Turnagain Arm, close to Anchorage. We spent a month at the site gathering information and asking questions. Early on we developed test themes. Some would fall away, while others would stand.

This is the basic process Avocet followed on the Alaska Turnagain Arm project before writing any text:

1. Inventory existing interpretation and themes along Turnagain Arm.

2. Discover the audience: out-of-state visitors, in-state, Anchorage residents.

3. Find out the frequent local users and experts, and cultivate them as contacts.

4. Inventory the three sites. Research in library. Call experts and invite them to the site. Ask questions. Listen well. Be prepared to veer off in a new direction.

5. Develop umbrella theme, overall site themes, and panel themes with accompanying objectives for readers.

6. Identify potential illustrations, graphics and make sure the graphic artist or designer is brought into the project early on.

7. Revise themes and objectives after review by selected pros, and of course the point person for Alaska State Parks.

8. Obtain approval from key people before writing text.

9. Prepare for the unexpected.

10. Keep to the time schedule and deadlines.

It took some searching before we were ever ready to put fingers to the laptop. Start writing too soon and you may find yourself staring at that monitor without inspiration. There's a balance, however, between enough research and too much. Deadlines always help make that decision for you.

Once we were able to identify an umbrella theme for all the displays, the pieces started to fall in place. The theme shows up as a title with an accompanying logo on the top of all the displays: *Turnagain Arm: Colliding Forces and Converging Trails*. The theme helped pull together natural history (earthquakes, glaciology, climate, tides) with cultural history (Dena'ina people, gold rush era, the building of the Alaska railroad).

The point about getting approval from key people at the theme/objective level is critical. This way you can avoid writing by committee and enduring major changes late in a project. In Alaska, we were fortunate to be working with a professional interpreter. No matter what, there are still obstacles to overcome. For example, the budget did not allow us to create original graphics. Instead, Avocet had to come up with existing, copyright free material. It was a bit of a retrofit project that worked.

Write Tight and Lively

"I'm sorry I didn't have time to make it shorter." A journalism professor once advised us to apologize with those words if we handed in an assignment over the word count. Her point, that it's harder to write short than it is to write long, is just as important for interpreters.

It's a tremendous challenge to whittle down concepts to their essentials, preserve the whole, and still attract the attention of passersby. By nailing down a theme for every display, publication or exhibit, you can zero in on the information you need. Sam Ham, author of *Environmental Interpretation* (1992), is an advocate of interpretation communicating a discernible theme, which is different from a topic. The topic of this paper, for instance, is interpretive writing. The theme is that good interpretive writing is not just another roadside attraction; it gets results.

Everyone comes up with a writing process that fits their individual style. We often devote time to developing the titles first. There are some people who may only read the headlines. If the titles are thematic and interesting, you may entice them to read on. Often, we can get away with including more text on a panel than the accepted 50 to 100 words by breaking it down into a hierarchy of subtitles with text. Here are a few titles from the Alaska project, tied to the overall theme of Colliding Forces and Converging Trails: *Glacial Trailbreakers; Tough Travels on Turnagain Arm Trail; A Cranberry Corridor; Avalanche! A Powerful Punch.*

The actual writing ought to follow the rules of good interpretive prose. Involve your audience by incorporating questions and actions into the text. Write like a storyteller, not an *Encyclopedia Britannica* author. Look for first person narratives or provocative quotes to include. Use active tense. Avoid acronyms, jargon and difficult terms. Vary your sentence lengths, while avoiding long sentences with more than one clause. Remember, too, that every writer needs an editor. Avocet is fortunate in being a writer/editor team. We actually like to see that red pen in action. Finally, if possible evaluate the success of your writing once people are reading the finished product. Did they connect with your theme?

Tackle the Big Canvas

Break the "rules." Challenge the accepted. As an interpretive writer, you wield power with your pen. Don't be afraid to push the limits. We're not suggesting that interpretive writing can save the world. We do consider it a worthy endeavor to connect our messages with the big picture. When Avocet began the Alaska project, we were given a laundry list of project ideas. We used and appreciated that initial list. However, while researching the project we discovered an overlooked story.

The Dena'ina people who had inhabited the land for centuries are now fewer than 1,000, and their language and culture is dying out. Their stories of place and landscape are rich with meaning for us today. Rather than staying with the gold rush, railroad, and natural history as the main topic areas, we proposed to feature Dena'ina culture along the Bird Ridge trail, one of the three sites. Their story is certainly one of converging trails and colliding forces.

Our proposal was met with enthusiasm, not only from Alaska State Parks, but from the Native Language Center in Fairbanks, the CIRI Foundation (dedicated to preserving native cultures) and others. We were able to get permission to reprint a beautiful series of color illustrations accompanying excerpts from Dena'ina stories. We made sure that every part of the text and illustrations were reviewed and acceptable to the Dena'ina. Suddenly, the significance of the entire project progressed to a higher level.

Rachel Carson wrote in *The Sense of Wonder*: "For most of us, knowledge of our world comes largely through sight, yet we look about with such unseeing eyes that we are partially blind." One way to open your eyes to unnoticed beauty is to ask yourself, "What if I had never seen this before? What if I knew I would never see it again?"

We challenge interpretive writers to look at the world with a fresh, curious, and passionate gaze. With that approach, you will never write just another roadside attraction.

References Cited

Carson, Rachel. 1965. *The Sense of Wonder.* New York: Harper & Row.

Ham, Sam H. 1992. *Environmental Interpretation: A Practical Guide for People with Big Ideas and Small Budgets.* Golden, CO: North American Press.

McKibben, Bill, ed. 1992. *Birch Browsings: A John Burroughs Reader,* New York: Penguin Books.

QUEST FOR THE PERFECT SIGN

John W. Hanna, Ph.D.
President
Inside Outside Corporation

Lisa Brochu
Writer
Inside Outside Corporation

Bob Hernbrode
Watchable Wildlife Coordinator
Colorado Division of Wildlife

Ames Fowler
President
Grand Visuals

***ABSTRACT**: A sign product competition resulted in a fused-PVC technology that exceeded the criteria of durability and low cost. The technology allows rapid production of low-cost (less than half of some comparable techniques), full-color, digital signs that allow removal of most marks, conceal cuts and scratches, minimize fade and reflection of sunlight, and pass bullets without shattering or splitting.*

***KEYWORDS**: Signs, interpretive signage, fused-PVC, digital-format signs, watchable wildlife, naturalist notebook.*

A Felt Need
Our quest for the perfect sign was driven by dollars. Certain existing sign products are durable and beautiful but initial cost can be prohibitive. Replacement cost is sometimes impossible. Our situation called for some new thinking.

Colorado State Parks and the Division of Wildlife were faced with a need for high quality signs to showcase wildlife found in the state parks. Each park was to receive a set of signs in a kiosk interpreting that park's specific wildlife stories and issues. That meant the production of over 200 large full-color signs. Colorado's lottery has certainly been benevolent but price out 200+, 16-square-foot porcelain signs and you see the challenge. We needed both low price and high performance for large format signs.

Exploring the Challenge
Colorado provided a diverse arena in which to observe different sign techniques in their "natural" habitat. We were able to observe gunshot signs, fogged signs, rusted signs, delaminated signs, scratched and cracked signs, signs taken over by insects, signs altered with markers and spray paint, and signs faded by the sun. We saw a lot of what we didn't want and wanted to avoid. It was easy to develop specifications. We wanted a sign medium that presented full color capability with comparatively low cost and minimized or eliminated the above problems.

The Colorado Watchable Wildlife in Parks program called for the development of eight park kiosks with six signs in each in the first year. We selected this as our experimental year and challenged three fabricators to develop prototypes that they felt would best meet the above challenges. After seeing the performance of the three prototype sign types, we would select the sign type that best met our criteria and use that type for all signs in the future years.

Each of the three fabricators worked with digital technology for imaging. Two fabricators imaged onto adhesive backed vinyls and adhered those to acrylic plastics. The third fabricator imaged directly to PVC and protected that with a tough vinyl. All three fabricators were comparable in cost but differed in performance.

Outcomes
The two techniques using acrylic plastics resulted in similar looking and performing signs. Even using a reduced glare Lexan product, both signs were sufficiently reflective to make reading uncomfortable in Colorado's bright sun. Those signs were also vulnerable to scratching on the back side, necessitating extra care in storage and installation. The acrylic plastic fogged when cleaned with solvents, cracked or shattered when shot or hit with hard heavy objects, and retained noticeable scratches. The large, brightly colored digital outputs were generally accurate renditions of the full color art and literature pieces depicting naturalist notebook pages, but fading occured rapidly.

The technique adhering the digital images onto PVC products greatly addressed most of our concerns in testing. A 7-mm, high-powered rifle shot left a 7-mm hole in the sign with no shattering or cracking. The bullet hole in a section of art on the sign was almost invisible. The Lustex vinyl covering the sign did not fog when cleaned with solvents (xylene and acetone) or rubbed with 200-grit sandpaper. As with the other signs, there was nothing to rust. In testing, delamination has not been a problem around deep cuts or the bullet holes. We have been able to remove spray paints and permanent markers using solvents, although care must be taken to remove the solvent as quickly as possible. One year of fade testing in direct sunlight at 9,000 feet has shown no change in the color. In nonformal testing, United Airlines has handled the sign as baggage (unprotected) on four flights and several hundred persons have walked, tromped, and danced on the test sign at trade shows. In field installations, the signs have a soft, matte finish appearance that provides a high-quality appearance for showcasing the naturalist notebook pages.

The Process

Working with the developer of the fused PVC process, Grand Visuals, we are now using the following process to develop our interpretive signs:

1. We begin with flat art, photo, transparency, negative, or photo CD.

2. Necessary steps, such as scanning, are taken by the fabricator to develop the final computer file complete with all images, retouching, and text.

3. A proprietary imaging process fuses the image to 6mm expanded PVC sheets up to 48" by 96". The PVC is a variation of the lightweight white plastic that is used for many home sewer applications. (We use other media for printing exhibit backdrops.)

4. A durable vinyl overcoat with ultraviolet protectant is then applied to the surface. This overcoat is UL rated as flooring material. Once applied, the sign is ready for installation.

The process itself can be done in a short time span meaning quick turnaround for scheduled projects. Imagine a sign delivery in a week.

Cost Implications

Sign fabrication price is one of the best features. It's probably unfair to compare prices since the use of digital technology makes this a very different product. However, these fused PVC signs can run as little as 10% of the cost of some of the more traditional sign techniques. For example, our 42" by 48" full-color signs cost approximately $650 for the first sign and $450 for replacements. That's approximately $30 to $40 per square foot for full color sign panels. Combine that with high durability, vandal resistance, and quick turnaround and we feel like our quest has taken us closer to the perfect sign.

BEST COPY AVAILABLE

Zoos, Wildlife Parks, and Aquaria

The Lewis & Clark Expedition of 1804–05 found the buffalo so plentiful that they darkened the whole Plains. As other mountain men and explorers wandered into this vast landscape, they also found an incredible abundance of wildlife: bison, pronghorn, elk and deer grazing on the broad Plains, bighorn and many grizzly bears. Today, when wildlife makes an appearance in Yellowstone, it creates long traffic jams as people fly from their vehicles to snap once-in-a-lifetime photos or capture film footage.

THE ANIMAL ENRICHMENT AND EDUCATION CONNECTION

Barbara Ray
Outreach/Interpretive Program Coordinator
Columbus Zoo
P.O. Box 400
Powell, OH 43065

ABSTRACT*: Educators who utilize live animals as part of an educational message are charged with two challenging tasks: (1) to ensure the safety and welfare of the animals and (2) to provide insightful and fun presentations for the visitors. While we tend to plan programs by focusing on a topic or idea we feel is important to impart to others, this paper challenges us to look directly to our animals to derive program ideas through the enrichment opportunities we provide them.*

KEYWORDS*: Animal enrichment, creative planning, environmental enrichment, behavior modification, education animals, animal welfare, animal management.*

Introduction

As interpreters, we want to create presentations which are fun and informative in special or unique ways in order to make lasting impressions on our audiences. For those of us who incorporate live animals in those programs, we are charged with a second and challenging task of doing so in a manner that in no way impacts negatively on their welfare and which, in fact, actually *enriches* their lives. By our own training and creativity we are able to plan those great programs. But are we as well equipped as we think we are to utilize live animals? Is the care and enrichment of our program animals as much of a priority in practice as we say it is when we teach with the animals? In cases where the interpreters are also the animals' keepers and trainers, this is generally the case. However, many interpreters and volunteer educators work with program animals "during the program" and may not be involved in the daily care and management of those animals.

What happens to our programs if we design parts of them based on activity and behavior we see in the animals from enrichment opportunities we provide them? We have before us, in this scenario, a potentially wonderful blend of enhancing the lives of our animals and reaping exciting and stimulating material to incorporate into our programs! If this seems "too simple," it is! But combining enrichment and education requires a team effort on the part of all individuals involved in the management of the collection and the public presentation of those animals. The end results are worthwhile when we capture an audience and perhaps change forever the way they view animals and the relationships between humans, animals, and the environment.

The Blending of Enrichment and Education

In many cases, the actual enrichment provided to program animals "behind the scenes" may be out of the control of the interpreter. This paper proposes that interpreters take an active role in the care and enrichment of program animals not only by making sure the animals are actually benefitting from their role as animal ambassadors but also by shifting the focus of program planning to the animals themselves and not just the messages we want to impart to an audience. In other words, we must actively plan, offer and evaluate enrichment that may be incorporated into the actual presentations to the public.

To succeed at combining enrichment and education, we must be willing to change the way we normally plan programming. We must design a plan to offer enrichment, experiment with the enrichment, evaluate the results and incorporate that which is feasible.

Our initial step is to plan, experiment, and keep detailed records of enrichment offered to the animals. Planning means assessing what we have: for which species are we planning, what is the natural history, what is the background of this individual (or group)? Then we begin brainstorming! We write down *every* imagined toy or method of enrichment, no matter how far-fetched! As we begin to look at the details of the proposed ideas against the list of "enrichment hazards" we are able to weed out the wild ideas that really won't work. More significantly, we will discover some seemingly "wild ideas" that can and do work.

The animals and people may benefit greatly from this no-holds-barred approach. Since program animals typically have much more human contact than exhibit animals, different types of enrichment can be planned and used that may not be suitable for noncontact animals.

After we choose some potential enrichment options, we experiment! We try them out and keep detailed records, even videotape of sessions and our observations. Out of these observations often come the most unexpected results!

Experimenting with Enrichment

The majority of animals used in contact programs are small mammals, reptiles, and birds. Sometimes these animals are housed "on exhibit" and removed for specific programs. Others are housed in off-exhibit holding areas. For many program animals, simply handling them and taking them "outside" the holding area is enrichment when they are accustomed to people and seem to like being with the handlers. For others, say in the case of many reptiles, which often adapt to and tolerate handling very well, the actual handling is a stress factor. However, this minimal stress is not necessarily negative since they live in relatively stress-free environments in terms of a quiet place to live with food provided, etc.

Enrichment can be offered to stimulate behavior as well as reward activity or behavior. For example, a large turtle (*Heosemys grandis*, "giant hill turtle") housed in a relatively confined pool is exercised in a nearby carpeted classroom. While the location may seem odd, as a contact animal, much of this animal's environment includes the human landscape. Since this animal is fed free-choice in his enclosure, but is relatively sedentary there, the idea is to allow him room to roam freely and exercise. However, he often would simply sit lazily in one spot, so the interpreters (who are also the keepers and trainers of the education collection) decided to try and find something to motivate him to move around. They found he enjoyed small (1/2") balled up pieces of Bird of Prey Diet as a treat and would walk toward a piece lying a few feet from him. Since interpreters are a fun lot, always looking for something out of the ordinary to do, they decided to try an experiment to test the color vision capabilities of this particular species. In the event the experiment worked, they knew they had a potentially great enrichment activity that people would find as or more stimulating than the turtle!

The idea, as brainstormed by the group, was to find out what colors the turtle could actually see and whether he could be trained to pick out a specific color marker in order to demonstrate (to people) he could actually see color.

(Keep in mind the initial reason for the enrichment was to get the turtle to exercise). This is the point at which the creative juices really flow, to find answers to the problems of (1) How do we present colors to a turtle? and (2) How do we get a turtle to "pick" a specific color?

The interpreters met as a team and designed a three-part plan to accomplish the goals of (1) exercising the turtle and (2) being able to demonstrate how vision and memory work in this reptile. All staff involved in visitor programming agreed that a reptile demonstration such as this would help change people's attitudes toward reptiles. They deemed the choice of a reptile as particularly significant because the public has much more exposure to high-profile mammals and birds exhibiting natural behaviors during demonstrations—not many people give reptiles too much credit for having the type of learning intelligence attributed to mammals and birds.

The first step of the plan was to offer Bird of Prey (BOP) treats on six "placemats" (4" x 6") of the same shape and material but different colors. Red, orange, yellow, green, blue, and purple mats were used. The turtle chose the treat from the blue mat over 50% of the time, so the color blue was chosen as his "target" color.

The second part of the plan involved showing the turtle that the reward (BOP) would come after he touched the blue color marker. This was done using a toy clicker as a bridge.

At this stage, the third part of the plan was introduced. Five identical-shaped color markers were lined up in a row. The turtle was placed 2 feet away. He walked directly to and touched the blue marker. The markers were rearranged in every possible order and even placed in different locations in the room. Each time, he chose the blue. Both goals had been achieved! He was exercising *and* picking out a single color from a group!

This particular enrichment activity was incorporated into public programs by having a volunteer from the audience come on stage and rearrange the markers in any order of their choice. The audience is always baffled at how the animal looks around at all the choices and then walks to the blue, from any distance or location relative to the markers. Before the audience can groan in boredom at how long he takes to actually get to the marker (he is a turtle, not a hare!), the interpreter has a moment to teach the audience about adaptations like color vision and how and why the enrichment is done. Suspense builds in the final seconds as he closes in on the markers (will he *really* choose blue?!) and the biggest "ahhh!" always comes from the interpreter who is relieved the turtle still knows what he is doing! And all this from the simple goal of getting the animal to exercise!

This is merely one example from an endless list of examples of the ways enrichment for your animals can become stimulating educational material for your visitors.

Putting Enrichment into the Show!

Interpreters and volunteers who use live animals should, ideally, be involved in their daily care, but, if not, should certainly be key players on the enrichment team in planning and carrying out the activities, observations, and decisions to incorporate a particular enrichment into public programs. After all, this is only fair to the animals, who must trust their handlers and know what to expect.

Planning and offering enrichment to animals requires time, energy, sometimes money, and always a sincere dedication to improving the lives of animals. Planning quality programs for people requires the same. If we truly want public attitudes to shift from "animal as object" to living, breathing, significant beings in a shared world, we can be most effective through our examples: how we relate to our animals, how we handle them, and why.

As the public becomes more and more animal welfare-conscience, interpretive programs will necessarily need to show that the enrichment (above and beyond keeping the animal physically healthy) of its animals is the top priority.

The jury may always be out as to whether live animals are ever *needed* to get our educational messages across. We certainly do effective, quality programs without them. We also have seen the eyes of our visitors widen with awe when they look into the eye of a dolphin or watch the dark-tipped wings of a Harris hawk fly by or touch the silky, dry scales of a python, and even gaze, mystified, at a large, brown turtle as it lumbers slowly toward a row of markers to pick out his favorite blue color. We know the magic animals can create for people. Let us continue to work to make the experience for our animals just as enjoyable. Let's offer our animals the means to "tell" us what it is about them we should be teaching. They are, after all, our best resource to understanding their kind.

References

Bielitzki, Joseph. 1992. Letter to the Editor: Enrichment Hazards. *AB.Primate Newsletter,* 31(3):36.

Bowers, B.B., and G.M. Burghardt. 1992. The scientist and the snake: Relationships with reptiles. In: *The Inevitable Bond: Examining Scientist-Animal Interactions.* Cambridge/New York/Victoria: Cambridge University Press.

Kreger, M.D., and J.A. Mench. 1993. Behavioral and physiological effects of handling and restraint in the ball python and the blue-tongued skink. *Applied Animal Behavior Science* 38:323–66.

Kuczaj, Stan, T. Turner, and C. Lacinak. 1995. When is environmental enrichment most effective? *AZA Annual Conference Proceedings.* Wheeling, WV.

Yerke, R., and A. Burns. 1991. Measuring the impact of animal shows on visitor attitudes. *AZA Annual Conference Proceedings (*San Diego, California). Wheeling, WV.

BEYOND THE ZOO GATES: REACHING OUT TO URBAN CLASSROOMS

Karin Hostetter, Interpretive Naturalist
Denver Zoo
2300 Steele St.
Denver, CO 80205

ABSTRACT: *The Denver Zoo combined financial, personnel, and curriculum resources with the Colorado Division of Wildlife and many other area organizations to create a mega-program addressing current issues, such as relevancy of natural sciences to urban youth, multicultural education, science careers for minorities, effective hands-on science, informed public awareness and action, and state education standards correlation to programs.*

KEYWORDS: *Multicultural education, diversity, cultural inclusion, partnerships, urban education, environmental education.*

Introduction

Mention a zoo and everyone pictures—something: exotic animals, cages of bars and concrete, walk-through exhibits, cotton candy, tired feet, and fun. Mention a state wildlife department and people think of hunting, licenses, game wardens, fishing, and regulations. Zoos have expanded their concerns to include local wildlife and habitat conservation while wildlife departments help nongame wildlife and encourage Watchable Wildlife programs. The Denver Zoo and Colorado Division of Wildlife found themselves trying to take these expanded mission messages to the public at the same point in time. And they both especially wanted to reach the same group of nontraditional users of their services.

History

A couple of years ago, the Directors of the Denver Zoo and the Colorado Division of Wildlife (DOW) were casually talking after work discussing the needs and future directions of their respective organizations. The Denver Zoo was in extreme need of an education building to house its rapidly growing programs and large number of volunteers, but lacked funding. DOW needed a building/space and outreach programming to reach state residents who were not hunters. DOW had money, but no place for a building or means for major program development. The obvious conclusion to the directors was to build a facility on the zoo's property with DOW funding and jointly develop a program based at that facility which would serve the goals of both organizations.

A plan was immediately put into action. A committee of education and financial staff from both organizations met monthly over the next two years working out legal documents for transferring funds, formal relationship of the two agencies, means of securing additional funding, building design and use, and a general program design for the new joint program. The result is the Gates Wildlife Conservation Education Center, a 34,000-square-foot, $3-million, three-story building at a prominent location on the zoo grounds. Construction was scheduled to begin in September 1996.

Program Development

What would the new program look like? DOW had a long-range goal of reaching every school child in Denver Public Schools each year by the year 2000. The Denver Zoo received special tax monies from a six-county area. Obviously, reaching every student in public schools every year in a six county area was unmanageable. The zoo wanted to reach urban non-white public who live nearby, but traditionally did not visit the zoo except on free days and did not even book programs (free to all schools) into their schools. The early program discussions during the first two years resulted in some general goals and direction:

1. Schools in urban areas would be targeted.

2. The pilot-year program would be presented to the second grade of fifteen schools in the six counties.

3. The program would expand every year and eventually cover grades 1 through 12.

4. The program would consist of six to eight monthly classroom visits and one or two field trips.

5. Classroom visits would be delivered by a program teacher, not by the classroom teacher.

6. Field trip transportation would be paid for by the program.

7. Partnerships with other area organizations would be sought.

The next steps were to find out from other zoos, museums, and nature centers what successful urban programs already existed and to learn what the targeted community thought of the basic program designs.

NAI national workshops provided a starting point for finding existing successful targeted urban programs. Any urban program anyone could mention was contacted. Each program director was asked whether his/her program had been successful and why or why not. They were also asked to provide any curriculum or written materials that went with the program. These were purchased when necessary. With the exception of only a few programs, the results were surprising. The primary reason given that programs failed was always "the school did not have enough money." When asked whether the program would have been successful with unlimited funds, no one knew. Program directors judged successful were also queried about their success. Answers were generally either "I do not know" or "It just is, it is good education." A couple of program directors had specific suggestions and yielded these conclusions:

1. Make the information (examples, activities—everything) relevant to urban life. Know what urban life is all about.

2. Be prepared to work with people with needs and issues different from our traditional visitors—cultural customs, languages, concerns (money, food, shelter), family makeup, and so forth.

3. Base every aspect of the program on intentional and definite decisions. This allows changes in specific parts of the program, if needed, and permits duplication of the program, which will still work in different cities/states.

Two African-American college students taking an education research class at a local college chose to help out the program and talked to parents of elementary school students in the targeted area. The results were mostly what was expected and confirmed the direction the program was going. Two frequent comments were incorporated into the program:

1. Parents care about cultural role models for their children while children want good/fun education; having teachers from their own culture does not matter that much to children.

2. Parents said it was nice that the program was designed to cooperate with schools. However, they were more comfortable knowing where their kids were, what they were doing, and that they were safe during school days and hours. They wanted high-quality programs at nonschool times (summer, weekends, after school) in places the kids went such as recreation centers, churches, etc.

From other programs for schools, knowledge existed as to what teachers needed:

1. A program that did not cost any/much money.

2. Very little teacher prep time. Lots of good curricula exist on a "here it is, you do it" basis. Teachers do not have the time to shop, read, try, etc.

3. Any new classroom activity must be aligned with the Colorado State Model Content Standards.

4. Teachers are tired of short-term partnerships—organizations that offer a program for one year and then move on (especially if it is a good program).

At this point, the program was well on its way with a location, funding, and goals. The full committee put continued program development in the hands of one individual each from the zoo and DOW working together.

Curriculum Topics

What to teach was the next concern. Colorado is ahead of the national program on educational content standards. The state guidelines list what a student will know and do in each subject area grouped by K–3rd grade, 4–6, 7–9, and 10–12. School districts implement these into the specific grade that best works for them. Using the state standards and several district implementations, an outline of a unifying theme with six to eight classroom visit topics was created for each grade.

Science curriculum specialists from every school district within the six counties were contacted and four meetings set up with three to five specialists at each one (all districts but three or four sent a curriculum specialist to a focus meeting). At these meetings, the overall program purpose and design were explained. The topic outline was discussed; specialists were asked whether the topics met with curriculum of the corresponding grade and whether any topics should be deleted. The topic outline met with approval for all school districts, with two considerations mentioned several times.

1. Be sure the topics are made relevant to urban life.

2. Let teachers choose into which grade the theme fits best, since each school district implements the state standards slightly different.

The curriculum specialists were also asked for ideas on the high school program format since monthly classroom visits would probably not work. Finally, they were asked for names of schools within their district which they felt would benefit from the program and fit its goals and purposes.

Selecting Pilot Schools

The principal of every school suggested by a curriculum specialist, plus a few others who had contacted the program directly, were sent a letter explaining why his/her school was receiving this information, a program explanation booklet, and a questionnaire asking whether that school was interested in participating. The response required the principal's signature.

After the response due date, a committee of four sat down to choose schools. Only schools that returned the questionnaire were originally considered. The commitment required of each participating school would be great, and the first step was returning questionnaire #1. In choosing schools, cultural diversity, urban location, school district, and number of students on free and reduced lunches were all factors. Two counties required some follow-up phone calls to get appropriate schools involved. Finally, seventeen schools were chosen.

Letters of acceptance and denial were sent to all schools. Those not chosen this year were promised to be selected next year if they were still interested (all fit the program parameters). Meetings were set up at each school to discuss the program with the principal and all teachers who might be involved (first through third grade, media, art, music, etc.). Meetings at each school gave school personnel a chance to ask questions and gave program designers an opportunity to see the schools. Each meeting lasted 45 to 60 minutes. Teachers provided other thoughts:

1. Provide a way for parents to be involved.

2. Consider offering the program in a shorter time period to better match school curriculum plans.

3. Add a consumer oriented industry (garden produce growers, wool growers, etc.) as a field trip site.

4. Add early-childhood and kindergarten levels to the program.

Multicultural Component

In visiting each school, many cultural groups were mentioned and observed. The need to be aware of other cultures' customs, interpret other cultures accurately, and include elements of other cultures and more has been the subject of journal articles, curriculum, research, and workshops. Even everyday vocabulary uses words such as "multicultural," "diversity awareness," and "inclusion." Since every program would have many cultures represented, the task seemed enormous to include them all, let alone learn about them all.

Five cultural groups were identified as present in almost every school: African-American, Asian-American, Caucasian, Hispanic, and Native American. A call to the library for characteristics of these cultures proved useless. They could pull countless books to read for the information, but that required more time than program staff had available. Instead, a questionnaire on the information desired, including cultural values, famous people, primary languages and religions, holidays, books to read, and issues for the culture in this area was given to one individual from each cultural group. These were returned and then the appropriate sheet was distributed to as many individuals as possible from each cultural group for them to comment. Only individuals from the Front Range area were asked to participate and no one could comment on a culture with which he/she did not identify. The result is a guideline to these five cultures in the Denver metroplex area at this point in time. The culture categories represent geographic cultures lumped together. It is impossible to get a list of characteristics for any culture that accurately describes every individual within the culture.

Cultural awareness and diversity are part of every lesson and every field trip. A story, craft, activity, or person must be presented from each culture group. These are listed in the lesson plan for the teachers but not emphasized to the students.

Field Trips

Many other existing area organizations offer quality environmental programming. Their involvement would enhance the overall program and allow the students to apply all they learned in a city school setting to a more wild and natural setting. An invitation to discuss the program and their possible involvement as field trip sites was mailed to every known environmental group. It took many meetings over several months to work out all the details. Field trip sites must be able to handle one entire grade from one school on a single day or two consecutive days. They must develop a program that is not available to every other school on a regular basis and must fit the theme for the grade. At least one previsit and one postvisit activity must also be designed. Field site leaders/managers choose when the program school groups can visit. All scheduling is done through program staff.

Many of the organizations did not have a site to visit, so two other ways of participating were created. An organization can agree to develop and present one of the theme lessons in the classrooms. However, the group must be able and willing to present the lesson to all seventeen schools on each school's schedule and to develop the lesson within the program design.

Other organizations had speakers but could not make such a time commitment or had brochures or other related programs that schools could utilize. These are put on a resource list which was given to the teachers to contact at their own time, interest, and expense.

Still Happening

At the time of this writing, program teachers are being hired and teacher training workshops organized. The program begins September 1996 in the schools. In order to reach adults, family science nights are being planned at each school. Stations will be set up to present program activities, and students can help teach the adults. Volunteers and teachers will also be on hand to help with activity explanations and program information. Internet access for teachers and interactive pages for students are currently being developed. These aspects will be covered in the workshop presentation, or the author can be contacted for more details on these parts.

About half-way through this pilot year, a steering committee will be developed to guide the program as it grows and develops. Composition, goals, and frequency of meetings all have yet to be determined.

Evaluation is an integral part of any new program. Plans are to seek feedback on both cognitive and affective progress of students from students, parents, and teachers, both this year and over time. Assistance with developing evaluation instruments is being contracted from a college with input from teachers participating in the program.

Expansion

The second year of the program will add approximately five schools and increase to service early-childhood through third grade. The third year will expand the curriculum to grade five. In three years every student in an elementary school will be serviced. The fourth year will add middle school and the fourth or fifth year will expand to high school. The high school component will take the form of six or so seminars scheduled throughout the year at the school. Any student attending a predetermined number of these seminars will receive science credit. In addition, career exploration opportunities will be designed with the current field trip sites and others. Besides the grade expansion during the second year, the program will also expand into non-school settings such as recreation centers, church youth groups, shelters, etc. Development of this aspect will begin this fall.

Since this is a direct service program, a limit exists to the number of people who can be accommodated. In order to reach more, teacher workshops will be offered in the Denver area and possibly across the state. The Gates Wildlife Conservation Education Center is being developed with distance learning capabilities so that schools across the country can access the program and utilize the curriculum book plus purchase the tool kits for the complete program.

Conclusion

The work has been long and intense, but the results are exciting. The potential for this program is enormous! The program now has a name, "Wonders in Nature—Wonders in Neighborhoods" or "WIN-WIN." Participating agencies are many and varied, with some already committed to come on board for future grades program development. Many current educational concerns are intentionally and carefully incorporated to create a program sensitive to the needs of all users.

DOLPHINS AS ENVIRONMENTAL EDUCATION TOOLS

Peggy Sloan
Director of Education
The Dolphin Research Center
P.O. Box 522875
Marathon Shores, FL 33052

ABSTRACT: *Conservation practices, and subsequently environmental education, has evolved to include consideration of habitat in the preservation of species. Animals not in danger of extinction, but captivating to people, can be helpful in providing incentive for habitat preservation. Dolphins offer excellent educational opportunities for environmental educators.*

KEYWORDS: *Dolphins, environmental education, tools.*

Educational Walking Tours

Interpretive tours offer educators an opportunity to disseminate a great deal of information in a relatively short period of time. At the Dolphin Research Center (DRC), dolphins captivate visitors as they tour the facility. It is the job of the interpretive guide to monitor the pulse of the crowd and capitalize on their interest as much as possible. While dolphins are naturally appealing to most people, a creative interpreter can utilize the best of the resources they have to illustrate almost any environmental issue.

The dolphins at DRC live in a natural environment; fenced areas of the Gulf of Mexico. It is very obvious to all visitors how ocean pollution will affect the animals they are meeting. Behaviors the dolphins learn are functional. Behaviors illustrate everything from the differences between fish and mammals, to their regulation of body temperature. Helping visitors to appreciate the beauty of your resource, just for the sake of it, is perfectly fine, but all the better if you can channel that appreciation to create positive changes in the people you have contact with.

Tours at DRC are approximately 45 minutes and include an introduction to the 17 dolphins and 3 sea lions who call the Center home. Information covered ranges from basic dolphin knowledge to more specific information on careers, etc. No tour, however, is complete without at least some conservation message relating back to the dolphins and the environment we all share.

Dolphinsight

For many visitors to DRC, dolphin training is perceived as the ideal career. In order to provide the curious with a realistic look at what working with dolphins involves, DRC created a 3-1/2–hour educational program. In addition to learning about training and acoustics, students have a 30-minute workshop on conservation. The conservation portion of the program comes *after* participants have met the dolphins, after they have begun to associate with the animals as individuals. What we stress to participants is the importance of maximizing their experience at DRC by sharing what they learn with others. We encourage students to be ambassadors for the dolphins. Conservation messages are often simple to insert, and universal in content, once you learn how to relate them to the resources at hand.

Dolphin Encounter

The ultimate experience, for some dolphin enthusiasts, is to enter the dolphins' environment and interact with them. DRC offers a 2-1/2–hour educational program that includes a 15 to 20 minute session in the water with the dolphins. Whatever the resources at hand, the more intimate interaction visitors feel they have, the more impassioned they are upon departure. By introducing visitors to the dolphins, on the dolphins' terms, we cultivate a deeper understanding and appreciation of the species. The final phase of the Dolphin Encounter is a conservation workshop dealing with direct threats to wild dolphins. There is no doubt that people's perceptions change after meeting the dolphins face to face, that at least some become champions of dolphin protection and conservation in general. If you are able to offer visitors an intimate encounter with the resources available to you, you will stand to gain immensely in support of your particular mission.

Dolphinlab

Opportunities to spend an extended period of time (a week or more) teaching students about your resource allows for inclusion of environmental education on a large scale. At DRC we offer a weeklong college accredited course called Dolphinlab. It is an interest in dolphins that brings students to DRC. At DRC we utilize the students' interest in dolphins to share information on a variety of topics. What we strive to accomplish with Dolphinlab is to teach about marine mammals and the environments we share, while providing the subsequent empowerment to help students effect positive change. By interspersing seminars with dolphin interaction we balance thought and feeling and foster a strong connection between the knowledge being gained and the resource at hand. Dolphins are often perceived as something more than the beautiful, intelligent animals they are. At DRC we work very hard to de-mystify dolphins, to help people appreciate the realistic attributes of these animals, and the very real dangers they and their habitat face. Having an extended period of time to work with a group of students offers an excellent opportunity to be creative and utilize your resource to the fullest extent of environmental education.

IN DEFENSE OF ANTHROPOMORPHISM

Carl Strang, Naturalist
Forest Preserve District of DuPage County
Box 2339
Glen Ellyn, IL 60138

***ABSTRACT:** Anthropomorphism can be used in performance, naming of captive wild animals, and talking about animal emotionality without compromising reasonable standards of logic or human-animal relations. In fact, sometimes the alternatives to anthropomorphism lead to the misinterpretation of animal behavior, typological thinking, and unacceptably limited options in interpretive technique.*

***KEYWORDS:** Animals, anthropomorphism, metaphor, myth, storytelling.*

Introduction

Anthropomorphism, "an interpretation of what is not human or personal in terms of human or personal characteristics" (*Webster's Seventh New Collegiate Dictionary*), has become an epithet in interpretive circles. Perhaps the most often cited spook in this particular graveyard is Bambi, the Disney movie in which cute little talking animals get blown away by evil hunters. Other headstones bear titles such as "Naming Captive Wild Animals," "Claiming that Animals Experience Emotions," and "Dressing in Animal or Plant Costumes and Pretending to Represent What Those Organisms Are Like." In this paper, I will be playing an interpreter's Igor, exhuming the buried coffins of anthropomorphism and examining their contents for usable pieces.

Folk Tales and Anthropomorphism

Anthropomorphism has a time-honored pedigree. Folk tales the world over feature animals that walk, talk and in practically every way behave like human beings while exhibiting particular characteristics. Coyote or Rabbit or Wolverine is a trickster, Spider is sometimes a trickster and sometimes a wise Grandmother, snakes are sneaky and treacherous, turtles are slow but solid and reliable, and other examples are legion. Storytellers, including myself and many other interpreters, tell such stories. One seldom hears objections to this particular form of anthropomorphism.

Why is this phenomenon so widespread among cultures, and what makes these stories so attractive? The answer, I believe, is that we all know that these are stories about people, not stories about animals. More specifically, the animals and other nonhuman characters represent different aspects of human beings, abstracted or converted to metaphors for an entertaining yet enlightening examination. But the characters in these stories are one step removed from actual human beings, which would confuse the issue with their complete humanness. Tellers and listeners can pretend they are talking about animals when in fact they are discussing human weaknesses, foibles, evils and strengths. Stories take place in what the Australian indigenes call "dreamtime," the world of the subconscious and of spirit. They speak to us subtly without the need for explicit analysis. We don't feel the need to interpret stories, and in fact storytellers are cautioned not to explain their meaning, because a good folk tale has many levels of meaning and thus the potential to convey a different meaning to each hearer. Even children know better than to be confused about real animals, plants or rocks by what they hear in these stories. They do not expect real squirrels, snakes or foxes to speak or behave as they do in folk tales. Yet an encounter with the animal reminds its viewer of the story, acting as a mnemonic device that freshens the story's lesson.

The Special Case of Bambi

What about Bambi? What makes that story so different? There are several important differences between the Bambi movie and folk tales. First, Bambi's animal characters are too much like individual people. Instead of representing certain human traits or aspects, these characters represent complete personalities. The human characters in the film, in contrast, are one-dimensional. They do not speak. In a traditional tale they might represent people's irrational destructive tendencies. But in the physical world of everyday experience there are people who hunt, so the behavior of the hunters lacks the tension that renders the talking animal characters of folk tales into metaphors. This confuses, and allows viewers to focus on the superficial level of the story, concluding that hunting is bad. People came into Bambi grounded in the rules of folk and fairy tales, and because the story did not observe those rules, or perhaps abused them, problematic conclusions were drawn by many viewers.

Rules for Correct Anthropomorphism

Thus anthropomorphism *per se* is not the problem with Bambi. The rules of anthropomorphism in stories, if followed consistently, produce powerful lessons. These rules might be summarized as follows: (1) the animal or other nonhuman characters must display behaviors that clearly are inappropriate for their species, to make it clear that these are not intended to represent the actual animals, plants, rocks, etc.; and (2) the characters cannot represent complete personalities, but must be abstracted so as to be representative of particular aspects of human beings. Sometimes those aspects may themselves be metaphorical, as in the "magical" powers displayed by some characters. Thus, realistic paintings of dogs playing cards and smoking may not be high art, but they are acceptable anthropomorphism. No one would believe that real dogs would play cards. The dogs in the paintings represent a certain side of male human behavior in a caricatured fashion. In the Okanagan story of Tick and Deer (Teit et al. 1917), Coyote represents, among other things, a consciousness of lack while the multi-armed sorcerer represents, among other things, a consciousness of abundance or prosperity. At first, Coyote is in poverty and receives help from the sorcerer. When Coyote misunderstands the sorcerer's abundance, he tries to kill the sorcerer to steal his wealth. This fails, Coyote learns the lesson and discovers that he, too, has magical powers (i.e., he has metaphorically absorbed the notion of prosperity consciousness). Coyote then uses his powers to give a gift to the sorcerer, transforming him into the first tick, who from then on lives in a world of food and is the embodiment of prosperity (incidentally introducing the story's hearer to a mnemonic in the form of every tick that person subsequently will encounter).

A performance setting has much the same quality as the telling of a folk story. A person putting on an animal costume, especially when that costume is abstracted in some way and the person does not try to mimic the actual animal's behavior too closely, is stepping into the same dreamtime space occupied by folk tales and dreams. It is important, though, that the performer recognize this, at least semiconsciously. When I wear my abstracted chickadee costume and lead a group of children in my chickadee song, I am confident that they can easily see that I am not a bird. While they may be able to recognize a real chickadee from my performance, they will not expect the bird to speak to them. It is clear that I am a human talking about chickadees and using the device of the costume and a few abstracted behavior patterns to teach something about chickadees and, perhaps more importantly, show ways in which chickadees can teach us positive lessons about how to live our everyday lives.

Animal Emotionality, and Naming

Do animals have emotions? Behaviorist psychologists have influenced people into denying this as a possibility, but cannot really demonstrate the nonexistence of emotions in animal experience or consciousness. I am not persuaded by their arguments. After all, we look at structural homologies between animals and draw profound conclusions. For instance, the bones of a whale's flippers are clearly homologous to those of terrestrial mammals' front limbs. We can follow the evolution of whales from terrestrial ancestors in the fossil record (Thewissen et al. 1994), confirming the connection. In a similar way, we see the structure of that part of the human brain where emotions are centered. We share this part of the brain stem not only with other mammals but with reptiles. When comparable loci in animals' brains are stimulated electrically they exhibit behaviors which, in humans, would be expressive of emotions (the classical experiments were done by W.R. Hess and by E.V. Holst and U.V. Saint-Paul, as described by Eibl-Eibesfeldt 1970, Chapter 9). It seems much more reasonable to me to accept the possibility, or even likelihood, of emotionality in animals in the face of such observations, than to deny it outright. We simply have to be cautious about asserting that a particular human emotion is being expressed by a particular animal in a particular situation. But cautious speculation seems safe to me as long as it is understood and labeled as such.

Finally, what about the practice of naming captive wild animals? This sometimes is frowned upon because it is assumed that this makes the animals seem like pets, or even people (anthropomorphism). There are good lessons to be taught with such naming, however. Names point to the uniqueness of the individual. This uniqueness is as true in animals as it is in us. I am much less comfortable with the typological thinking (a red-tail is a red-tail is a red-tail) that results from the religious avoidance of naming, than I am with naming that respects the individuality of a particular bird. Care must be used, however, to allow the red-tailed hawk to be a red-tailed hawk and to represent it as such, and not as one's little feathered but otherwise human buddy.

Conclusion

In summary I find most anthropomorphism to be harmless. Used properly, especially according to the deeply rooted conventions of folk tales, anthropomorphism can be a powerful teaching tool. We need to be clear in our own minds about the differences between the entities of the wild as metaphors and as beings in their own right with their own, non-human qualities. An interpreter who is clear about these differences should be able to walk through the graveyard of anthropomorphism without needing to whistle.

References Cited

Eibl-Eibesfeldt, Irenäus. 1970. *Ethology: The Biology of Behavior.* New York: Holt, Rinehart and Winston.

Teit, J.A., F. Livingston, M.K. Gould, and H.J. Spinden. 1917. Folk-tales of Salishan and Sahaptin tribes. Franz Boas, ed. *Memoirs of the Am. Folk-lore Society* 11:xii+1–205.

Thewissen, J.G.M., S.T. Hussain, and M. Arif. 1994. Fossil evidence for the origin of aquatic locomotion in archaeocete whales. *Science* 263:210–12. (See also an accompanying news article on pp. 180–81 of the same issue.)

THING BAGS: PUT VARIETY INTO PRESENTATIONS WITH HOUSEHOLD ITEMS

Rhana Smout Paris
Special Activities Coordinator
North Carolina Aquarium-Roanoke Island
P.O. Box 967
Manteo, NC 27954

***ABSTRACT**: Liven up presentations with a simple bag of household items. The mystery of pulling each item out will keep participants engaged and you on your toes.*

***KEYWORDS**: Props, mnemonics, mystery, participation.*

Introduction

Thing bags, mystery sacks, or storyteller bags—call them what you will, a collection of items with which you can teach a subject is a useful addition to any interpreter's bag of tricks. Start with a simple cloth bag. Fill it with items you find around the house or yard, and you have the makings of your own thing bag.

How Does a Simple Prop Like a Thing Bag Help in This Age of Technology?

A thing bag is:

- A mnemonic device—Storytellers from many native groups rely on bags of items to remind them of stories (Caduto and Bruchac 1988). The items you select for your thing bag will remind you to talk about important subjects without having to refer to written notes;

- An anticipation builder—Children as well as adults love a good mystery and putting your hand into the unknown builds excitement and anticipation.

- A participation encourager—Asking visitors for help is always a welcome way to build rapport. Eliciting help from your visitors also gives them a vested interest in what you have to say—after all, isn't it their program, too, if they get involved?

- A pace setter—You control the flow of the program by how often you reach for the bag to pull a new item out.

- A crowd controller—Reward children who are behaving appropriately by allowing them to reveal each new item.

- A program freshener—You may be surprised by visitor responses when you ask them to brainstorm why a particular item was included in your thing bag for that program's topic. Trying to anticipate where discussions may lead will keep you on your toes and make each presentation fresh.

- A brain stretcher—Particularly for older children and adults, thing bags can be used to build divergent thinking skills and brainstorming techniques. Allow able students to come up with their own ideas for how an item relates to the topic at hand.

A Sample Thing Bag

As an example, the following items were selected for a thing bag used to discuss snakes. The probable subjects to be covered are also included although tangents should be anticipated when presenting the task of brainstorming to a group of older participants. A snake thing bag includes:

- A can of corn—what kind of food does a snake eat and does it eat its prey whole?

- A plastic egg—how a snake has young.

- Groucho Marx glasses—how well camouflaged are snakes and how good are their senses of vision and smell?

- A sock—how do snakes shed their skin?

- A toy car—how fast can a snake move?

- Ear muffs—how does a snake hear and what does it do in the winter?

More items could be included, depending on the time allowed for the program and the age of the group.

How Can You Build a Thing Bag of Your Own?

Start by finding something to hold your items. Pillow cases, grain bags, and stuff sacks are flexible, reusable, and adaptable to almost any collection of items. An oatmeal box pushed into a big sock will protect small or fragile items. Make a list of the subjects you want to cover. For example, if you are talking about animals, you will probably discuss senses, how an animal finds its food/water/shelter/space, how it gets around, and how it has babies, among other topics. Then brainstorm items which will help you remember to talk about those subjects you deem important. Cut out those items which are too expensive, too hard to find, or too esoteric to work effectively. Using common household items helps to cut down on costs and to make the bag adaptable to a number of topics. Put the selected items into your thing bag, add visitors, and enjoy the results.

Reference Cited

Caduto, Michael J., and Joseph Bruchac. 1988. *Keepers of the Earth Teacher's Guide*. Golden, CO: Fulcrum.

Accessibility

Everybody needs beauty as well as bread; places to play in and pray in; where Nature may heal and cheer and give strength to body and soul.

—*John Muir, 1908*

ACCESSIBILITY *IS* CUSTOMER SERVICE!

W. Kay Ellis
National Accessibility Program Coordinator
U.S. Bureau of Land Management
1849 C St., N.W.; Rm. 204-LS
Washington, D.C. 20240-9998

Hal Hallett
National Recreation Program Leader
U.S. Bureau of Land Management
1849 C St., N.W.; Rm. 204-LS
Washington, D.C. 20240-9998

ABSTRACT: *Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act mandates that federal and public facilities and programs be as accessible as possible to all visitors—including those with disabilities. At the same time, we are all focusing on providing quality "customer service" in our programs. This presentation comes from the premise that using accessible design in our facilities and programs is not just an answer to a legislative mandate, but rather an approach to good customer service. Other sessions will focus on the mechanics of accessibility. This session will focus on "customer service" aspects—the identification of your customers, including those with disabilities, and, especially, the provision of information about your services.*

KEYWORDS: *Accessibility, disability, access information, customer/visitor, customer service.*

Introduction

Recent organizational emphasis has been placed on the provision of quality "customer service." In fact, "customer service" seems to be the current buzzword with much being written about it and how to provide it. At the same time, accessibility for people with disabilities has received added emphasis with the passage of the Americans with Disabilities Act which mandates access for people with disabilities in all facilities and programs of public accommodation. Older legislation has mandated accessibility in federally conducted and assisted programs and facilities for decades. As in the past, accessibility is often thought of as a "separate, special" service that must be provided, when, in actuality, it is an integral part of providing quality customer service for everyone.

What Is Customer Service?

Before this question can be adequately answered, you must first ask, "What is the agency/organization providing?" In other words, what draws the customer to the agency in the first place? Do you have a product to sell, information to give, or opportunities to explore? What is your agency's mission and goals and their relationship to your "customers" (visitors)?

Most of us provide recreation and/or interpretive opportunities for our customers/visitors to experience. So, "customer service" could be defined as providing services to meet the visitors' needs as they enter into those experiences. It is more than just giving the customers what they *want* (you may not always be able to give them exactly what they want). It's understanding what is necessary to fulfill the customer *needs* in order for them to have an opportunity for a positive experience in your program. Making sure your facilities and programs are fully accessible to all visitors, including those with disabilities, facilitates *comprehensive* customer service—making sure the visitor needs of the greatest number of people are being considered and met.

Who Are Your Customers/Visitors?

There are several factors to be considered when identifying target audiences and providing services for your customers, actual and potential. Some of these factors and related questions are:

- *Location.* Where is your facility/program located? Is it in a remote or urban area? What are the transportation needs? Is public transportation available?

- *Resource/attraction.* What do you have to offer? Why will people come to your area (what types of people will be attracted)?

- *Environment.* Is the environment a factor in visitor choice? What types of visitors?

- *Demographics.* Average age of typical visitor, primary language used, etc.

- *Seasonal considerations.* Do school groups make up the largest audience? Do you receive numerous summertime busloads of older visitors?

Remember, people with at least some sort of limitation, whether or not they are identified as "disabled," and others who will directly benefit from accessible design, will make up a large portion of the customers you identify.

Build It and They Will Come (?)

We are all familiar with the famous line, "Build it and they

171

will come" from the movie *Field of Dreams.* However, if people don't know about "it," they probably won't bother to come. This is especially true of the person with a disability who also needs to know accessibility information for planning purposes.

Strategies for Providing Information

There are numerous ways of providing information to your customers, both internally and through outreach efforts. Some methods are: brochures, print ads, fliers, subscriptions and registration forms, press releases, visitor center bulletin boards, public rooms, radio, newspaper articles, event calendars, newsletters, periodicals, community organizations, advocacy groups, schools, radio reading services, electronic bulletin boards, etc. When choosing methods for information dissemination, you must be sure the full range of customers have access to the information. In other words, do people with visual impairments have access to printed information? Also, do people who are deaf or hard of hearing have access to information that is presented over the radio or other aural methods?

Accessibility Information

In addition to the usual customer information regarding activities (e.g., time, place, tickets, transportation, etc.), information concerning the accessibility of programs and facilities is *critical* to people with disabilities as they plan their activities. Historically, people with disabilities have received accessibility information *after* they have arrived at a site, only to have a visit filled with surprises and disappointments due to lack of access. Among other things, wheelchair users and people with mobility limitations are concerned with parking, access routes, entrances, availability of water, accessible restrooms (what goes in must come out), and program locations. People who are deaf or hard of hearing look for the availability of sign language interpreters (must the service be requested weeks ahead of time?), assistive listening devices and how to request them, captioned AV programs, TTY numbers, and written information. For someone who is visually impaired, it's important to know of the availability of recorded information or large print, whether or not audio description of AVs is available, the presence of tactile displays and/or orientation maps, etc. Many of these accommodations also benefit people with various learning impairments, as well as foreign visitors.

Do You Want a Separate Accessibility Brochure?

In many instances, accessibility information can be included on the general site bulletin or other information brochure. However, space is usually at a premium, and accessibility information usually gets shortened to the point that it may not be useful. In addition, when changes are made for accessibility, subsequent changes to the general brochure take longer. A separate brochure outlining accessibility features and services to be used in conjunction with the general brochure may be desirable.

Accessibility Brochure: Production Considerations

In addition to the information itself, there are several production considerations when developing an accessibility brochure:

- *Type size.* Research suggests 12- to 14-point type will be acceptable for most readers, including older visitors. Using 14- to 18-point type will benefit those visually impaired readers with some vision. (Many instances have been reported where a larger-type brochure, when placed next to an identical brochure with smaller type, has been taken more often.) The larger type size may create a slightly larger document, however, the ease with which the information is used outweighs the extra space which may be needed. The amount of space between lines (leading) is also critical. Smaller type requires more space between lines for easier reading. Larger type needs less space to keep the letters from "floating."

- *Type style.* Another critical factor in print production is type style. Type styles with clean, crisp edges are far easier to read. The words are more easily recognized and processed with little chance of running together. San serif or simple serif type (little or no "curly" letters with consistency in ink spread) is preferred. Fortunately, the advent of the computer has made choices in type copy easier.

- *Color and contrast.* Generally, the greater the contrast, the easier the copy is to read. However, some extremely strong or bright background colors may be uncomfortable to read. Black or dark ink on light matte paper seems to be the best choice. The reverse, light type on dark background, seems more difficult for a lot of people since it is not a conventional format. Avoid a background screen tint greater than 10% or a background of colors that bleed together. Type will be lost in too strong a background. People with visual problems will not be able to pull the type out from the background.

- *Paper.* Use good-quality paper. Thin paper, especially if you print on both sides, allows the ink to "bleed through," causing a visual distraction.

- *Language.* The appearance of a brochure will attract readers, but positive language will keep them reading. Be sure your choice of words is positive and puts "people first." Avoid phrases like *for the blind.* Instead, use phrases and words which emphasize "people first," such as *people with visual impairments.* Be aware that other phrases like *deaf and dumb* and *wheelchair bound* or *confined to a wheelchair* are not only outdated and very negative, but also very misleading. The first phrase implies mental incapacitation. Use instead the words *person who is deaf* or *person with a hearing impairment.* In addition, wheelchairs don't bind or confine people. They provide mobility and freedom. The term *wheelchair user* presents a more accurate and positive picture. Also avoid cutesy phrases such as *differently abled, physically challenged,* or *special.* Finally, be especially careful with phrases such as *accessible with assistance,* or *moderately accessible.* Those are relative phrases with little real meaning. Accessible with *how much* assistance *from whom*? Give customers information about what they will encounter and let them make the choices for participation.

Above all, with brochures, be specific, accurate, and objective. Use accessibility symbols for easy identification, but use them carefully to denote activities/areas which are truly accessible. In addition, make the brochures easily available. Customers can't use them if they don't know they exist.

Conclusion

Good customer service will enhance a visitor's experience. Using accessible design in planning and implementation of an interpretive program will ensure comprehensive customer service which will meet the needs of the greatest number of visitors. Providing customers with information regarding your site and activities is critical to good customer service, especially those customers with disabilities who also need accessibility information for effective planning. Care must be taken in how that information is presented to customers to ensure the greatest number can use it and are made welcome to your facilities and programs.

THE DISABLED COMMUNITY—YOUR BEST RESOURCE FOR ACCESSIBLE DESIGN

Amanda Hughes
Interpretive Planner
Texas Parks and Wildlife Department
P.O. Box 541694
Houston, TX 77254

ABSTRACT: *The Texas Parks and Wildlife Department recently opened a new universally accessible nature trail in Brazos Bend State Park. Designed in close collaboration with the Greater Houston area disabled community, the trail fully integrates visitors with disabilities into the mainstream and breaks down traditional barriers to effective communication and learning.*

KEYWORDS: *Accessibility, trail, design, disabled, community.*

Introduction

In November 1995, the Texas Parks and Wildlife Department opened a new, universally accessible nature trail in Brazos Bend State Park. This project is the first of its kind and was designed in close collaboration with the Greater Houston Area disabled community. The Creekfield Lake Nature Trail is a 0.5-mile paved interpretive trail which leads visitors around a unique wetland and encourages interactive learning and discovery through full use of the senses.

This project was designed with the goal of fully integrating visitors with disabilities into the mainstream. With this in mind, we were able to successfully enhance the learning and understanding of all visitors, not just those with disabilities. The trail incorporates a number of unique elements including the following: a series of interpretive panels with bronze casts of different plants and animals (including an alligator, a dragonfly, a catfish, an armadillo and cattails); an orientation guidance system with miniature "speed bumps" imbedded in the trail to alert visitors to upcoming interpretive panels; a trail profile that provides information on trail surface, length, and width, average and maximum grade and cross-slope; an accessible boardwalk and observation decks, shaded rest areas with accessible benches, and an audio-described trail tour.

Disabled Community Involvement

The greater Houston area disabled community was the driving force behind the design of this project, from the beginning of the project through to project completion. Early in the planning process department staff invited individuals with various disabilities to Brazos Bend State Park to tour the project site, and we received many creative suggestions on how to effectively break down both physical and communication barriers to universal access. Our disabled volunteers (some children and some adults) included people who were blind or visually impaired, people who were deaf or hearing impaired, people with various physical disabilities, people with learning disabilities, and people with mental retardation. Everyone who worked on the project shared a common enjoyment of the outdoors and began to foster a sense of "project ownership" which helped us weather severe flooding during fall 1994.

After each group of people with disabilities had shared their ideas we drew up a budget estimate and were able to raise the money needed to incorporate these ideas into our final project design. Disabled volunteers reviewed the many prototypes that were built and worked alongside department staff to make the necessary design changes. The merit of the project garnered a broad base of support from local, state, and federal agencies. Most importantly, it drew an incredibly dedicated core of disabled and able-bodied volunteers who participated in all phases of the project, including trail construction and exhibit design.

Building a strong coalition of support within the disabled community early on in our planning process was critical to the success of this project. Many of the disabled volunteers in this project were respected members of the greater Houston area disabled community (i.e., staff members from Texas Rehabilitation Commission, the Houston Center for Independent Living, and the Texas Governor's Committee on People with Disabilities). These individuals worked together with the department to disseminate news releases and information on this project to their consumers statewide. They also contacted news media on our behalf and complemented our own media services coverage of the project.

We hope to use this project as a prototype for others in our park system. Utilizing our constituents in the planning and development process to facilitate their needs and requirements was instrumental to achieving an effective, workable design. This was especially important since department staff are able-bodied and had no prior experience of designing for accessibility.

Background References

Edwards, J.R. 1996. In touch with nature. *Texas Parks and Wildlife Magazine.* June 1996. 42-47.

Hughes, A. 1995. Interpreting in the spirit of ADA. *Legacy.* May/June 1995. 6-7.

National Center on Accessibility. 1994. Methods and techniques on accessible interpretation. (Unpublished draft material). Bloomington, IN.

O'Callaghan, B., and S. Jurasz. 1992. Accessibility: Facts, challenges and opportunities for interpreters. In: Ham, S. 1992. *Environmental Interpretation: A practical guide for people with big ideas and small budgets.* Golden, CO: North American Press.

PLAE, Inc. 1993. *Universal Access to Outdoor Recreation: A Design Guide.* Berkeley, CA: MIG Communications.

TRICKS (AND GOOD ADVICE) FOR A TERRIFIC TACTILE TOUR

Marsha Knittig, Assistant Exhibit Program Developer
Minnesota Historical Society
345 Kellogg Boulevard West
St. Paul, MN 55102

ABSTRACT: *"A Sense of Family" is a tactile tour offering a variety of sensory experiences that help to communicate the message of the "Families" exhibit. It is just one way that the Minnesota Historical Society's History Center exhibits and programs are made accessible to visitors with little or no vision.*

KEYWORDS: *Tactile tour, assistive listening device, consumer advisory group, audio description, accessibility, American Disabilities Act.*

Introduction

The "Families" exhibit at the Minnesota History Center offers a unique opportunity for visitors—blind, vision impaired and sighted—to tour the exhibit and share the "Families" experience.

The message of the exhibit is communicated by touching reproductions and scale models, listening to recordings of exhibit text read by culturally accurate voices, taking part in smelling and tasting activities, participating in interpretive programs and hearing the multimedia program audio described.

The staff-guided tours are offered every Saturday afternoon from 1 to 2:15 p.m. There is no charge for the program, but reservations are required. Each tour is limited to a total of ten participants, with ten being the minimum age.

Offering "A Sense of Family: A Tactile Tour of the 'Families' Exhibit" is part of the commitment of the Minnesota Historical Society to make exhibits and programs accessible to all visitors. This is an inclusive, accessible tour during regular gallery hours for all visitors, not just the target audience in the blind community.

The "Families" exhibit team budgeted for an assistant exhibit program developer who enlisted the help of a paid consumer advisory group consisting of six community people with a range of sight abilities. The consumers were strong advocates who met with staff every six weeks for six months prior to the opening of the exhibit to advise on the progress of the tour.

The Tour Begins

The tour participants are met at the Information Desk by a museum interpreter scheduled for the tour. The tour participants are given directions to the Information Desk on the first level when they make reservations. After a brief welcome with introductions and name tags, the tour leader proceeds to hand out the wireless sound system, the same system that works as an assistive listening device for other museum programs.

"We will be using a sound system today that will enable everyone to hear what I am saying, even in a busy exhibit area. I will be wearing a microphone and a transmitter, and each one of you will be wearing an earphone and a receiver. I will be like a radio station, and you will be able to hear my voice as well as some prerecorded selections," begins the instructions for the system.

The system has the added advantage of offering everyone the option of "turning up the volume" without having to ask for that service. The earphones are not as intrusive as an ear bud and not as cumbersome as dual headphones, and with no foam parts, they are easy to maintain. It is a battery operated FM system available from dealers who advertise in the yellow pages under "Sound Systems." A complete tour system for twenty costs approximately $2,000.

The tour participants are given very specific information on how to hold the earphone and drop it over their right ear. We have learned that most of our participants with little or no vision come with friends and family, but we are careful that our directions work for everyone. The leader continues to explain how to attach the earphone cable to the receiver and how to turn on the receiver and adjust the volume. The tour leader is already wearing the microphone and transmitter. "Raise your hand when you can hear my voice through your receiver," is what every leader says at this point. It's a simple system. The hands go up.

Orientation to the Minnesota Historical Society

The leader proceeds with an orientation to the Minnesota Historical Society and the History Center. We know from audience research that most of our visitors who are blind and vision impaired are also first-time visitors. Their orientation includes a series of quarter turns in the Great Hall that acquaints them with the location of the restrooms, coat racks, elevators, Cafe Minnesota, and the two museum stores.

Underfoot in the Great Hall are ten bronze "charms" imbedded in the terrazzo floor. The first tactile experience is an engraving of one of the charms, approximately 3" x 3", engraved on 16-gauge metal and mounted on a 1" thick wood block. Black-and-white camera-ready art work, and a purchase order for $105 was all that was needed to have the engravings made by a "photo engraver" found in the yellow pages. A nail head marks the top of each engraving for easier identification. Who has the teepee? The walleye? The bear? The tractor? Their Minnesota significance is explained.

The engravings, the sound system, and two boxes of tactile objects are in boxes on three shelves of an easy rolling utility cart.

Up to the Galleries

The tour proceeds to the third level where the exhibit galleries are located. With everyone against a railing, facing the same direction, the tour leader tells about the various exhibits and tactile opportunities available. The History Center's unique "made in Minnesota" construction, as well as its location between the Cathedral of St. Paul and the Capitol are described.

Another tactile experience is a quilt square pieced in the North Star pattern, a pattern that is repeated throughout the building. A nubby beige fabric represents the porous Winona limestone, a smooth gray fabric is Rockville granite, and a silky white fabric is white marble from Georgia. The fabrics give three different tactile sensations so that tour participants can "see" the pattern. My office mate's quilter friend donated the time it took to piece the squares.

Always, the group is given clear directions when they move and tour information is shared only when everyone is stopped. The light levels have been increased during the tour hour as per ADA recommendations.

The next stop is just inside Gallery A, a space that "Families" shares with "Communities." The space is described, as requested by the advisory group: "Gallery A is an impressive space! Four 20' x 50' ramblers would fit easily into this space, and still leave plenty of room for birds to fly over. The ceiling is black with a metal matrix for light and sound equipment. This is a typical Saturday afternoon . . . (the activity of visitors is described)." The tour leaders are the eyes of the tour participants, going from general to specific information.

"Families" is to the right with multicolored, hand-quilted banners announcing each of the six exhibit sections. The first section they visit is "Coming Together." In every section, they stop and are introduced to recordings, sensory experiences, activities, and programs.

The "Families" Compact Disc

The sound system has been "talk radio" up to this point. With the addition of a Y-cord input and an auxiliary input cord to the transmitter, the tour leader can transmit pre-recorded selections from a portable CD player. The two additional components were available for approximately $50 from the same supplier who sold us the sound system. The portable CD player is easily accessible on the top shelf of the utility cart.

A compact disc with twenty selections from the exhibit text, spoken by culturally accurate voices, with sound effects and music, was developed for the tour. By using local talent and an independent sound specialist, the cost was kept to a minimum. Readers, many of them museum interpreters, were paid $30 per selection, and the sound specialist charged $35 an hour for 40 hours of work. Networking to have the five compact disc cut at the National Park Service's Interpretive Design Center at Harpers Ferry, West Virginia, represented a savings of several hundred dollars.

In "Coming Together," the section on love and romance, we listen to Abby Weed read a love letter she wrote to Benjamin Gray in 1927. And while we're listening to the 60-second selection, we pass an old Valentine's Day candy box, similar to the one in the exhibit case. The milk chocolate hearts inside were custom ordered, for easy unwrapping, for $.10 each. The chocolatier was found under "Candy and Confectionery—Retail" in the yellow pages. Tactile experiences in this section include the Hmong courtship balls and a diamond engagement ring, in an original box. It is important to reflect the cultural diversity of the exhibit—and of Minnesota.

A Variety of Experiences

- In the "Surviving Loss" section, participants enter a small theater where they sit and hear the 6-minute "Everything Must Change" multimedia program audio described. Audio description gives blind and low vision visitors a description of the setting, props, photos, and other visual aspects of the program, in the same fashion that a friend might whisper that information in your ear. The audio description was written and recorded on the fourth track of the show's laser disc by a local "audio describer" who charged $25 an hour for her services. The tour leader simply unplugs the CD player and plugs in the program, and the tour participants hear the entire show through their earphones.

- In the "Getting Along" section, participants take part in a regularly scheduled, hands-on "history a la carte" program called "Roles, Rules and Tools." The museum interpreter in the kitchen setting uses cards with simple verses describing one of the tools on the table. On Saturday afternoons, the large print cards used have an overlay of plastic with the verse written in Braille by a local transcription service. After reading a verse, visitors identify the correct object and enter into dialogue about the work that object accomplished and who did it, then and now.

- In the "Taking Care" section, there is the ever popular "Smell-o-Rama" interactive. Push the plungers by the medicine cabinet and see if you can recognize the smells. There is cough syrup, Vicks, baby powder, cod liver oil, and Ben-Gay. The tactile objects include a razor strap, bed pan, and Victorian rattle, purchased at local antique shops. The experiences are guaranteed to bring back memories.

- "Making Memories" is the site of the attic performing space for a variety of programs, including family dramas, History Bits (skits, games, and presentations), History Players (costumed characters), and storytellers. The attic scale model is available for touching.

At 2:15, the tour concludes. Tour participants are invited to return to the Information Desk with the tour leader, or they may stay in "Families" to tour on their own. There has not been time during the tactile tour to feel all the objects imbedded in the reading rails, or to participate in all the interactive activities, or to experience the unique, "please touch" environments of the six sections.

Conclusion

The Minnesota Historical Society has learned some important lessons. We have learned that accessible programming needs to be part of the exhibit planning process, that planning for an advisory group and a sound system is time and money well spent, and networking can serve your organization when your ideas are bigger than your budget.

We believe that the "Families" tour can serve as a model for making future exhibits accessible to a growing number of visitors with little or no vision.

Cross-Cultural Communication

Father Pierre-Jean DeSmet was ordained a priest in the Jesuit order of the Catholic Church in 1827. The Belgian-born priest traveled west on the Oregon Trail to Fort Hall, Idaho. After meeting a delegation of Flathead Indians, the kindly priest was invited to the Bitterroot Valley where he established St. Mary's Mission in 1841, the first church in Montana. By 1850, younger generations of Indians had become angered by Father DeSmet's attempts to take religion to their enemies, the Blackfeet. The Mission was abandoned and later converted to a military fort.

CROSSING BORDERS THROUGH INTERPRETATION: TAROKO NATIONAL PARK IN TAIWAN, R.O.C.

Homer C. Wu, Doctoral Candidate
College of Forestry
Stephen F. Austin State University
Nacogdoches, TX 75962

Michael H. Legg, Assistant Dean
College of Forestry
Stephen F. Austin State University
Nacogdoches, TX 75962

***ABSTRACT**: Taiwan, Republic of China provides an opportunity to compare interpretive exhibits from a different culture with those of the U.S. Taiwan has only recently begun a National park program and has extensively built new interpretive facilities. Most involve cutting edge technology and some new ways to look at interactive interpretation. They also have used computers to reduce problems associated with visitors from several nations with different language requirements.*

***KEYWORDS**: Taiwan, visitor center, national park, interpretive program evaluation.*

Introduction

Taiwan, formerly known as Formosa, is an island, roughly shaped like a tobacco leaf. It is located about 100 miles off the southeast coast of the Chinese mainland in the Western Pacific between Japan and the Philippine Islands. This densely populated island is 245 miles long and 90 miles wide, an area about the size of Connecticut and New Hampshire together. Rugged mountains occupy almost 70 percent of the total land area with more than 100 peaks over 9,842 feet (Lin 1987).

Due to its wide range of altitude and its location on the Tropic of Cancer, the island supports four major plant communities: tropical, subtropical, temperate and alpine. There are about 4,300 species of vascular plants, including 3,600 species of flowering plants and 700 species of pteridophytes. It also supports a diverse wildlife population. There are 61 species of mammals (42 endemic), at least 424 species of birds (70 endemic), 92 species of reptiles, 30 species of amphibians, 140 species of freshwater fish, approximately 50,000 insect species including more than 400 species of butterflies, giving Taiwan one of the highest species diversities in the world.

Taiwan is a nation in which education is considered to be of paramount importance. This is reflected in the quality of the interpretive programs and facilities that have been developed since the establishment of the first national park in 1984. Modern visitor centers and exhibit areas are found throughout the park system. Typical of Chinese culture the latest in computer and audiovisual technology is the rule, not the exception. However, the Taiwanese also hold a deep appreciation for their cultural heritage. This is also reflected in the interpretive programming and facilities. This paper considers only one national park, Taroko.

Taroko National Park, near Hualien city, Taiwan, is reputed to be one of the geologic wonders of the world. It is famous throughout the world for the majestic landscape and the panoramic views of its famed gorge with soaring marble cliffs, waterfalls, mountain peaks and virgin forests. This park was established in 1986 encompassing a relatively large area of 227,341 acres. A major portion of the park area is over 6,300 feet above sea level, containing many of the most famous mountains in Taiwan. The highest point within the park is 12,270 feet above sea level, and has been considered as the most spectacular natural wonder on the island. Taroko gorge, a 12-mile canyon carved through nearly solid marble is the centerpiece of the region.

About 950,000 tourists came to Taroko National Park in 1993 (Ministry of Interior 1995). It is also ranked as the most frequently visited scenic site by foreign visitors (Chiang 1986). There are several interpretive exhibits at the park. They are as follows:

1. Visitor Center—Recreational Resources Exhibit Hall, Ecological Exhibit Hall, and Atayal Culture Exhibit Hall.

2. Pulowan Recreation Area—Atayal Handicrafts Exhibit Hall.

3. Lushui Geological Center—Lushui Geological Landscape Exhibit Hall.

The main components of these exhibits are audiovisual slide shows, displays, live demonstrations, computer interactive devices and mockups. According to the master plan of the Division of Interpretation, interpretive programs have been progressively used to enrich visitors' experiences and to educate and inform the public about the surrounding environment. Yet, the effectiveness of interpretive exhibits at Taroko National Park has not been scientifically evaluated. Most interpreters, program designers and decision makers have had to rely on their own impressions, previous knowledge or informal comments from visitors to assess the effectiveness of their interpretive programs.

Therefore, to improve the quality of interpretive programs, there is a need to evaluate interpretation. As knowledge and experiences tend to accumulate rapidly, it is difficult to diagnose a problem, much less to agree on a solution. Scientific evaluation is an efficient technique based upon empirical evidence to determine problems and the actions necessary to resolve them (Chelimsky 1994).

Visitor Center

Recreational Resources Exhibit Hall

This exhibit hall contains displays of recreational resources within Taroko National Park, such as a 48' x 10' wall map of the park, computer guiding system, TV/VCR introduction devices, electronic relief map.

Ecological Resources Exhibit Hall

This exhibit hall contains all kinds of ecological resources within Taroko National Park, such as wildlife ecosystem display, Taiwan's plantation chart, butterflies exhibits, Taroko geological mockup, interactive footprint devices, picture of Taroko landscape.

Atayal Culture Exhibit Hall

This exhibit hall presents Atayal Culture within Taroko National Park, such as TV/VCR introduction devices, crafts, costumes, history, tools, weapons, and Taiwan's Aborigines distribution chart. The Atayal are the indigenous people of Taroko Gorge. The Atayal tribe, one of Taiwan's ten aboriginal tribes, is divided into Atayal Proper and Sedeq Proper. Somewhere between 1680 and 1740, the Atayal people who lived near the upper reaches of the Chosui River, found broad wilderness to the east of the Central Mountain Ranges. They then crossed the mountains and settled in the valley of the Liwu River and its tributaries, where the sites of 79 old Atayal villages have already been found. (Yu 1989)

Pulowan Recreation Area

Atayal Handicrafts Exhibit Hall

This exhibit hall features handicrafts exhibit, prehistorical exhibit, and weaver demonstration. The Atayal practiced slash-burn agriculture, hunting, fishing and gathering. The Atayal also have a tradition of exceptional weaving. After Taiwan was recovered from Japan in 1945, the Han people introduced the Atayal to aquatic rice farming, but the mountain people preferred millet, corn, sweet potato, and hill rice (Yu 1989).

The Atayal tribe moved out of the Liwu River Valley near the beginning of the 20th century. Now there are only a few Atayal people living with their traditions in the park area.

The feature of this area is a 360-degree theater with programs about the Atayal culture. The circular theater provides an opportunity to immerse the visitor in the village life of a typical Atayal village.

Lushui Geological Center

Lushui Geological Landscape Exhibit Hall

The Lushui Geological center is a traditional museum of geology with numerous exhibits featuring interactive opportunities to learn. Due to the nature of the visitor, it is possible to allow access to relatively sensitive equipment and collections that would otherwise be locked behind display windows.

The exhibit hall features the following:

1. Geologic Time Exhibit—Paleozoic Era, Mesozoic Era, and Cenozoic Era

2. Plate Tectonics Exhibit—Sea-Floor Spreading, Convergent Plate-Boundary System, and Formation of Taiwan

3. Folds—It's an interactive model that uses colored material representing rock strata, representing geologic layers

4. Fossils Exhibit

5. The Three Main Rock Types—Volcanic Rock, Metamorphic, and Sedimentary

6. Beach and River Stones Exhibit

7. Microscopes Exhibit—Thin Sections of Various Minerals

8. TV/VCR Introduction Devices—The Beauty of Water and Stone; Mysteries of the Gorge; A Story of High Mountain; and Formation of the Gorge

Conclusion

Those exhibits aimed at interpreting the cultural heritage, historical events, and natural resources to the public have been successful in attracting increasing numbers of visitors at Taroko National Park. However, the effectiveness of the interpretation has not been evaluated other than by occasional internal audits. As a result, there is a lack of information concerning the effectiveness of interpretive exhibits or other interpretive services in the park. The authors are conducting a project to assess the effectiveness of each exhibit in terms of expanding the visitors' awareness and understanding and increasing the visitors' knowledge and appreciation of the park.

Literature Cited

Chelimsky, E. 1994. Making evaluation units effective. In: J.S. Wholey, H.P. Hatry, and K.E. Newcomer, eds. *Handbook of Practical Program Evaluation.* San Francisco, CA: Jossey-Bass Publishers.

Chiang, L.H. 1986. Foreign visitors in the Taroko National Park: A study of recreational experiences and opinions toward development. In: *Proceedings—National Wilderness Research Conference: Current Research.* USDA Forest Service General Technical Report INT-212. Ogden, UT: Intermountain Research Statio . pp. 345–47.

Construction and Planning Administration. 1985. *The Taiwan Nature Conservation Strategy.* Ministry of the Interior, Taiwan, R.O.C..

Hu, J.C. 1993. *A Brief Introduction to the Republic of China.* Government Information Office, Taiwan, R.O.C..

Lin, Y.C. 1987. *A Survey of Recreational Carrying Capacity and Demands at Yushan National Park.* Taiwan, R.O.C.: Environmental Planning and Landscape Center, Tung Hai University.

Yu, T.L. 1989. *Taroko National Park.* Taiwan, R.O.C.: Taroko National Park Headquarters.

The authors would like to thank the superintendent, Mr. Ching-Nan Liu, and the chief of interpretation, Mr. Teng-Lang Yu, at Taroko National Park, Taiwan for their help.

THE SPALDING-ALLEN COLLECTION

Bob Chenoweth
Museum Curator
Nez Perce National Historical Park
Spalding, ID 83551-0093

ABSTRACT: *An early, well-documented collection of Nez Perce material culture, significant not only to studies of Native North American cultural change but also to the history of missionary efforts, recently returned home and to the possession of the cultural descendants of its original makers. As a result of the excitement raised over the arrival, in 1831, of four Nez Perce arriving in St. Louis seeking the "Book of Heaven," Henry Harmon Spalding accompanied Marcus Whitman to establish a mission among the Nez Perce under the sponsorship of the American Board of Commissioners of Foreign Missions in 1836. Spalding's collections of natural history materials and material culture of the Nez Perce provided financial credit with benefactors back east in support of his missionary efforts. A number of objects of Nez Perce material culture were sent to Spalding's schoolmate, Dr. Dudley Allen, in Ohio. Allen's son inherited the collected objects and donated them to Oberlin College. Beginning in 1969, the National Park Service sought to acquire the collection for exhibit in the Spalding Visitor Center of Nez Perce National Historical Park. In 1980 a loan was formalized between Nez Perce National Historical Park and the Ohio Historical Society (then owners of the collection) and the collection became a basis of exhibits in the new Spalding Visitor Center. The Ohio Historical Society's recall of the loan in 1992 prompted a major fund-raising effort by the Nez Perce Tribe of Idaho to raise the funds necessary to purchase the collection. On June 30, 1996, the Spalding-Allen collection was purchased by the Nez Perce Tribe of Idaho and returned to exhibit in the Spalding Visitor Center of Nez Perce National Historical Park.*

KEYWORDS. *Native North American material culture studies, Nez Perce Tribe of Idaho, American Board of Commissioners of Foreign Missions, Henry Harmon Spalding, Nez Perce National Historical Park, Ohio Historical Society, Presbyterian missions.*

The Calling

In 1904 the Lewis and Clark Expedition reached Nez Perce country. Clifford Drury, Henry Spalding's biographer, suggests that the members of the expedition are possible sources for exposing the Nez Perce to Christianity.

In February 1812, four denominations formed the American Board of Commissioners of Foreign Missions (ABCFM) in response to a perceived need to "carry Christianity to the 'pagan' world" (Phillips 1969). The ABCFM was created amidst the New England Protestant zeal of the Congregational, Presbyterian, Dutch Reformed and German Reformed churches. The board expressed the missionary fervor that Martin Marty, in his 1984 book, *Pilgrims in Their Own Land*, described as "a Soul Rush that outpaced the Gold Rush." In addition to the Protestant rush to save souls, the catholic missions continued their missionary work in competition with the ABCFM. By the 1830s, foreign missions had reached Asia, Africa and the Sandwich Islands, and so-called "home missions" worked among the Cherokees and Choctaws in the east and among the Sioux, Osage, and Chippewa along the frontier.

In 1831 four Indians from the Pacific Northwest interior arrived in St. Louis. Allen Slickpoo identifies the four as Nez Perce and gives their names as Wep-tes-tse-mookh Tse-mookh 'Black Eagle,' Ka-ow-poo 'Of the Dawn,' Heh-yookts Toe-nihn 'Rabbit Skin Leggings' and Ta-weis-se-sim-nihn 'No Horns' (Slickpoo 1973). Clifford Drury recounts the confusion surrounding the history of the delegation and the ensuing religious rivalry surrounding interpretation of the event (Drury 1939). The result was that news stories appeared in the east about Indians from the remote Northwest coming to St. Louis asking that the white man's religion be taught in their lands.

The ABCFM began searching for missionaries to go to the Oregon Country. Part of this eagerness came from the hope that these Indians were as yet unspoiled by white contact, unlike the prevailing perceptions of the situation along the western frontier. In 1835 Dr. Marcus Whitman, Narcissa Prentiss Whitman, the Reverend Henry Spalding, and Eliza Hart Spalding were recruited. The board's Secretary for Indian Affairs, David Greene, instructed them:

> Let your single aim be seen to be for the benefit of the Indians, especially the introduction of Christian knowledge among them and the salvation of their souls. Avoid all secular and political interference with any class of men...let all your worldly and secular concerns be as limited and compact as your circumstances permit (Hulbert and Hulbert 1941).

Henry Harmon Spalding was born near Bath, New York, November 26, 1803, and joined the church October 2, 1825. He was educated at Franklin Academy (a Presbyterian/Congregationalist School) at Prattsburg, New York, in 1825, and taught school between 1826 and 1829. From 1829 to 1831, Spalding returned to Franklin Academy to study for the ministry, then went to Western Reserve College, located 26 miles southwest of Cleveland in Hudson, Ohio. There, Spalding met a senior named Dudley Allen, son of Dr. Peter Allen of Kinsmen, Ohio, and a lifelong friendship began. Spalding graduated August 28, 1833. In November 1833, Spalding enrolled at Lane Theological Seminary in Walnut Hills, near Cincinnati, Ohio, where he remained for the next two years. He returned to New York and was ordained a Presbyterian Minister August 27, 1835 (Drury 1939).

When the Spalding/Whitman party arrived in Oregon Territory in 1836, personal differences had already arisen which led Spalding to establish a separate mission site on the Clearwater in the heart of Nez Perce country. Neither Whitman nor Spalding was able to follow the instruction of David Greene. Both believed that conversion to an agrarian lifestyle needed to precede any attempt at conversion to christianity. The establishment of an agricultural station, both for their own maintenance and to educate the Indians, became their highest priority. Both Whitman Mission National Historical Site, near Walla Walla, Washington, and the Spalding Unit of Nez Perce National Historical Park bear testimony to their efforts at agricultural enterprise. It was in the context of developing and sustaining this enterprise that Spalding collected the artifacts that are the subject of this presentation and the heart of the Nez Perce Tribe of Idaho's recovery effort.

Departure to a Distant Land

During his years in Oregon Territory, Reverend Spalding acquired Nez Perce clothing, horse gear, and other items which he sent to his friend, and former Western Reserve College schoolmate, Dr. Dudley Allen. Spalding almost certainly didn't pay for these items, as he would have had no cash and the Nez Perce would have had no use for money. His diary entry of March 9, 1842 states:

> Traded today a large quantity of parfleshes, cords & Appishmores[1] for peas, corn, flour . . . Purchased one bag for Dr. Allen, 2 knives & 10 loads, one cap, 1 knife and 1 do (? another knife), 10 loads, 1 saddle pack, 20 loads (Drury 1958).

Rather, Spalding assigned a monetary worth to the items he sent to Allen in order to create an account from which to draw. Allen, in turn, sent Spalding various goods to aid in the operation of the mission. In addition to Indian artifacts, Spalding is known to have collected botanical and geological specimens for eastern colleges. A growing eastern interest in the economic potential of the west and a blossoming market in America and Europe for "curiosities" of the North American Indian tribes made Spalding's collection activities profitable.

The objects acquired by Spalding traveled down the Snake River to the Columbia where, at Fort Vancouver, they were loaded aboard a ship the ABCFM chartered each year to make the circuit of its missions, bringing supplies and new missionaries as well as transporting various other goods between the missions and the congregations back east. After leaving Fort Vancouver, the ship went to missions in the Sandwich Islands (Hawaii) before making its five-month return trip around Cape Horn to Boston or New York, where the objects began their overland journey to Allen in Kinsman, Ohio.

A Second Calling

The collection was inherited by Dr. Allen's son, Dudley Peter Allen, a graduate of Oberlin College and Harvard Medical College, who gave it to Oberlin College in 1893. Oberlin maintained a small museum collection through its Sociology Department. In March 1969, Jack Williams, Nez Perce National Historical Park Superintendent, sent a letter to this department seeking information and photographs of the collection.[2]

In all likelihood, Williams, who had long been interested in both Native American clothing and equipment and the history of the Nez Perce appaloosa horse,[3] found the reference to these objects in Drury's 1939 biography of Spalding and located an article referring to the collection in the February 1930 issue of the *Oberlin Alumni Magazine*. This article prompted Williams' letter to Oberlin. Professor Mark Papworth of Oberlin's Department of Sociology and Anthropology answered Williams' letter March 23, 1970 and offered to give the collection to the National Park Service "if and/or when" it was found.[4] Papworth didn't know it had been lent to the Ohio Historical Society (OHS) in Columbus back in 1942. With this response the National Park Service (NPS) let the matter rest for awhile.

Evidently Oberlin College hadn't forgotten where the collection resided. In 1977 the Allen Memorial Art Museum (named for Dudley Peter Allen, its benefactor) at Oberlin College contacted the OHS regarding the Spalding-Allen artifacts. The Allen Memorial Art Museum was planning an exhibition featuring its Native American art holdings, and asked to examine the collection "with a view to removing it to Oberlin."[5]

Nine years after Williams' original query, in 1978, and with apparently no knowledge of earlier NPS correspondence, Nez Perce National Historical Park Curator, Steve Shawley, again pursued the collection, now with the intent of obtaining it for exhibit in the planned Spalding Visitor Center of Nez Perce National Historical Park. Shawley, who obtained his Masters Degree in Anthropology in 1974 from the University of Idaho, may have learned of the location of the collection from his former advisor, Dr. Roderick Sprague, who had received a letter from Brad Baker of the Ohio Historical Society seeking information on other documented collections of Nez Perce material culture from the first half of the nineteenth century. Sometime prior to this, in 1976, Bill Holm, noted curator of the Thomas Burke Museum at the University of Washington, photographed the collection at the OHS while returning from a research trip to England, and Shawley may well have learned of the collection from him. In early November 1978, the Acting Regional Director for the Pacific Northwest Region of the National Park Service wrote to the director of the OHS requesting that Steve Shawley be allowed to examine the collection in Columbus.[6] Shawley was able to examine the collection during December and brought back news that the OHS would be willing to lend the collection to the National Park Service, "providing that ownership in the collection may be established with the Ohio Historical Center."[7]

A Return Home

It was not until January of 1980 that an agreement was completed to lend the collection to the National Park Service.[8] It came after nearly a year of deliberation and exchange of letters between the National Park Service and the Ohio Historical Society, including a letter of support from the Nez Perce Tribe.[9] However, the loan did not include a cradleboard, which was to be the featured artifact in the section of exhibits interpreting Nez Perce children.

Considerable time and expense had been directed toward exhibit development that included all the artifacts, based on the assurances of the curatorial staff at the OHS, and it came as a disappointing surprise when the OHS informed the National Park Service that the cradleboard would not be part of the loan. OHS museum staff told Shawley that the cradleboard was exhibited at a satellite museum and could easily be replaced with an artifact more in keeping with that museum's mission. It would be another ten years before the cradleboard was reunited with a part of the rest of the collection.

Between 1980 and 1992, the Spalding-Allen Collection remained on loan to the National Park Service without controversy. The terms were that OHS would lend the collection for a one year period with an indefinite number of renewals possible, that the NPS would insure the loan and the OHS would be identified as the owner. The collection was transported to the NPS's Harpers Ferry Center where Division of Museum Services conservators began stabilization treatment work to prepare the collection for exhibit at the newly constructed Nez Perce National Historical Park's Visitor Center in Spalding. At this time (December 1979) the collection, minus the cradleboard, was appraised at $52,700 and insured for $52,900 under a separate insurance policy. Even prior to the collection being exhibited, the Superintendent at Nez Perce National Historical Park sought to develop a longer-termed loan.[10] The National Park Service investment in the visitor center exhibits and the artifacts themselves (object treatment costs totaled $12,000) and the benefit to the OHS resulting from their increased value due to both the treatment and their broader public exposure, made such an agreement a significant measure in justifying NPS costs. Inquiry was also made about the loan of the cradleboard. In early 1983, the visitor center was completed and the artifacts were installed in the exhibit cases.

The terms of the OHS loan called for the collection to be appraised every five years. In 1985, the collection was reappraised at $104,850, the two dresses were considerably devalued but the men's hide shirts increased more than fourfold. This was most likely the result of their being originally appraised by an Ohio appraiser who was not aware of their cultural significance. The 1985 appraiser also confirmed that three baskets included in the loan were of African origin, not part of Spalding's collecting activities, and the National Park Service returned them to the Ohio Historical Society in 1986. The insurance policy was adjusted to $103,350 to reflect their return.[11] In the 1987 loan renewal correspondence Nez Perce National Historical Park Superintendent, Roy Weaver, again raised the question of an extended loan or gift of the collection to the National Park Service.

In June 1988, Nez Perce Superintendent Weaver requested "consideration in allowing this collection to become a permanent part of the Nez Perce National Historical Park Collection," in a letter to Gary Ness, Director of the Ohio Historical Society.[12] In late October the OHS agreed to lend one of the hide dresses to the Burke Museum in Seattle for an upcoming exhibition. The dress, and the cradleboard, still in Ohio, were lent to the Burke and reunited for the first time back in the Pacific Northwest since their departure nearly a century and a half previous when they were exhibited in the Washington State Centennial exhibit, "A Time of Gathering: Native Heritage in Washington State."

Early in 1990 another appraisal was conducted as required by the loan agreement. The collection was valued at five times the 1985 figure, $560,100. The insurance policy was changed accordingly, and discussions began to upgrade security at the park. The collection manager at the OHS also raised the question of having an NPS conservator examine the displayed artifacts, especially those on the wooden mannequins.

The Recall

In March 1992, several things came together which led to the first request by the OHS for the return of the Spalding-Allen Collection. OHS had already articulated its concern for the condition of the displayed artifacts. The organizers of the exhibition, "Sacred Encounters," had requested the use of four of the Spalding-Allen artifacts and the OHS was conducting a general review and audit of collections. The Superintendent of Nez Perce National Historical Park responded that this recall could not be undertaken on such short notice and that the disruptive effect could not be mitigated unless one more extension of the loan was granted. Nez Perce National Historical Park staff were planning the production of a scholarly catalogue of the collection and this effort would, as a result, be negated. Subsequent correspondence and phone calls resulted in a visit by members of the OHS in late 1992 to view the exhibits and to meet with NPS staff, Nez Perce Tribe of Idaho officials, and Nez Perce elders and families. As a result of the visit, OHS representatives gained a better idea of the importance of having the collection remain in Spalding, as well as an appreciation for the relationship between the tribe and the NPS. Several short loan extensions were granted in order for the National Park Service to prepare a proposal for the permanent retention of the collection at Nez Perce National Historical Park. In February 1993, the loan was extended to January 1994.

On September 24, 1993, an ad hoc committee was formed during the General Council meeting of the Nez Perce Tribe of Idaho. The group was given the task of developing a proposal for acquisition of the Spalding-Allen Collection. The committee was made up of four tribal elders and Nez Perce National Historical Park Curator, Sue Buchel. They held their first meeting September 29, 1993.

In December of 1993, a Memorandum of Understanding was concluded between the Nez Perce Tribe of Idaho and Nez Perce National Historical Park whereby the National Park Service and the Tribe would work together to acquire the Spalding-Allen Collection for the Nez Perce Tribe.[13] It was agreed that the Park would care for and display the artifacts but that the tribe would seek ownership from the OHS.

In May 1994 two Nez Perce Tribal representatives and two National Park Service representatives met with the Ohio Historical Society Collections Committee to begin negotiations for acquisition. The tribe proposed an outright donation; to purchase at below appraised value or for services in kind by the tribe; or an exchange with the National Park Service for a collection of equal value. This last option was pursued by the National Park Service but yielded no collections to exchange.

Communications were frequently difficult, however, several lines of communications were opened up through Pacific Northwest Regional director, Bill Walters, and through a meeting between Acting Midwest Regional director, Bill Schenk, and the Ohio Historical Society board in January 1995. At that meeting, the National Park Service was informed that OHS was again recalling the loan and that the objects were to be returned by December 31, 1995. On June 10, 1995, the chairman of the Nez Perce Tribal Executive Committee, Samuel Penney, wrote to the OHS reaffirming the tribe's interest in purchasing the collection. On June 23, OHS Director Gary Ness responded, saying that OHS was not necessarily committed to selling the collection, but would listen to reasonable offers under no particular time table. It did, however, expect the National Park Service to honor its loan agreement and return the collection by the deadline.

Homecoming

After considerable discussion and further negotiations, a tribal delegation met with the OHS in mid-December to follow up on an offer to purchase the collection at the appraised value. The OHS agreed and a joint statement was issued on December 12, 1995. Nez Perce National Historical Park signed a loan agreement with the OHS for the period January 1 to June 30, 1996 extending the loan until the purchase date. The agreement called for the tribe to pay $608,000 (the higher price reflects the addition of the cradleboard which was never lent) by June 1, 1996.

Following the purchase agreement, the Nez Perce Tribe hired Tom Hudson of Moscow, Idaho to coordinate the fund-raising effort. Individuals, organizations, the media, the Nez Perce and other tribes, along with the National Park Service contributed time and money and organized events to publicize and raise money for the collection. Over 4000 individuals and organizations contributed to the effort. On May 28, 1996 Nez Perce National Historical Park Curator Bob Chenoweth went to Columbus to inspect the cradleboard and prepare to bring it back to Idaho. On May 30, Nez Perce Tribal Executive Committee Chairman Penney presented a check to Ohio Historical Society Director Gary Ness for the purchase price. The cradleboard was returned to Idaho that day. A welcoming ceremony was held as part of the Chief Joseph and Warriors Memorial in Lapwai on June 15 and on June 29 an open house was held at Nez Perce National Historical Park marking the return of the collection to the exhibit gallery.

Endnotes

[1] Apishamore, from the Ojibwa Apishamon "something to lie down on": a saddle blanket usually of buffalo hide.

[2] Letter in Nez Perce National Historical Park (NEPE) files dated February 26, 1969, to President, Oberlin College, from Jack R. Williams, Superintendent, NEPE.

[3] Williams would later write the first judging guidelines for the Appaloosa Horse Club's "American Indian Costume Classes" (Williams 1977).

[4] Letter in NEPE files dated March 23, 1970, to Jack R. Williams, NEPE, from Mark Papworth, Department of Sociology and Anthropology, Oberlin College.

[5] Letter in NEPE files dated October 20, 1978, to Ohio Historical Society (OHS) Curator of Archaeology from Director, Allen Memorial Art Museum, Oberlin College.

[6] Letter in NEPE files dated November 8, 1978, to Director, OHS, from Acting Regional Director, Pacific Northwest Region, NPS.

[7] Letter in NEPE files dated January 10, 1979, to OHS Director from Superintendent, NEPE.

[8] Memorandum "Receipt of Museum Specimens" dated Jan 25, 1980, and a letter, dated February 21, 1980, to OHS from Superintendent, NEPE, NEPE files.

[9] Letter in NEPE files dated November 13, 1979, to Amos Loveday, OHS Dept. of Education, from Nez Perce Tribal Executive Committee Vice Chairman, Richard A. Halfmoon.

[10] Op. cit. letter of February 21, 1980.

[11] Letter in NEPE files dated August 26, 1986, to Melinda Knapp, OHS, from Superintendent, NEPE.

[12] Letter in NEPE files dated June 10, 1988, to Director, OHS, from Superintendent, NEPE.

[13] Memorandum of Understanding between the Nez Perce Tribe of Idaho and NEPE and in NEPE files.

References Cited

Drury, C.M. 1939. *Henry Harmon Spalding*. Caldwell, ID: Caxton Printers, Ltd.

———, ed. 1958. *The Diaries and Letters of Henry H. Spalding and Asa Bowen Smith relating to the Nez Perce Mission 1838-1842*. Glendale, CA: The Arthur H. Clark Company.

Hulbert, A.: Hulbert, D., ed. 1941. "Marcus Whitman Crusader," *Overland to the Pacific Vol. VI*. Denver, CO: The Stewart Commission, Colorado College.

Josephy, A.M., Jr. 1979. *The Nez Perce Indians and the Opening of the Northwest*. (Abridged Edition). Lincoln, NE: University of Nebraska Press.

Marty, M.E. 1984. *Pilgrims in Their Own Land*. Boston, MA: Little Brown and Co.

Phillips, C.J. 1969. *Protestant America and the Pagan World*. Cambridge, MA: Harvard University Press.

Slickpoo, A.P., Sr. 1973. *Noon Nee-Me-Poo (We, The Nez Perces)*. Lapwai, ID: Nez Perce Tribe of Idaho.

Williams, J.R. 1977. *Exhibitor's and Judge's Guide for American Indian Costume Classes*. Moscow, ID: Appaloosa Horse Club.

Additional References

Josephy, A.M., Jr. 1983. "The People of the Plateau." *Nez Perce Country: Official National Park Handbook*. Washington, D.C.: U.S. Department of the Interior. 14-181.

Shawley, S.D. 1974. *Nez Perce Dress: A Study in Culture Change*. M.A. Thesis. Moscow, ID: University of Idaho Department of Sociology/Anthropology.

Wright, Robin K., ed. 1990. *A Time of Gathering: Native Heritage in Washington State*. Seattle, WA: Burke Museum and University of Washington Press.

TACKLING TABOOS: INTERPRETATION OF STRIFE, CRIME, BELIEF, AND RELIEF

Michael H. Glen, Principal Consultant
Touchstone Heritage Management Consultants
Cruachan, Tayinloan
Tarbert, Argyll PA29 6XF, Scotland

***ABSTRACT**: War, civil strife, crime, religious belief, nuclear energy and bodily functions are topics full of taboos. Interpretive schemes for sites related to these topics can help to open minds, change impressions and bring about new perceptions among the visiting public—but only if the subjects are treated with openness and honesty.*

***KEYWORDS**: Civil strife, nuclear energy, prisons, sewerage, shrines, taboos, war.*

A Bit About Us

Touchstone is concerned with most aspects of planning and providing for visitors within, broadly, the framework of sustainable tourism. Increasingly, we develop creative concepts, draw up storylines and prepare scripts for exhibitions and publications. In the last ten years, we have completed more than 200 projects in the United Kingdom and Ireland and contributed to projects in Japan and Brunei. In our work we attempt to maintain our ethos of supporting the real and organic, which grows from its locus, rather than the synthetic and imposed, which owes little to its location. This is crucial if interpretive principles are to be maintained with any sense of integrity.

The Miseries and Joys of Taboos

Right, so much for the commercial—does that breach a taboo? What I want to relate in this paper are our experiences in tackling taboos—some serious, some apparently less so, but all fundamental at least within the context of Britain. *Tabu* is a Tongan word that means, in Polynesian, something that is marked off as simultaneously sacred and forbidden. Even that takes a bit of mind-getting-round. Is something revered just because you can't have it? Or is something forbidden simply because it is revered? Are the two aspects unrelated?

To a Scot of the Presbyterian tradition (but not profession), something sacred and/or forbidden sounds like a church elder's description of sexual intercourse (if I may breach a taboo by saying so). Today, taboo is generally held to mean anything placed under a social prohibition. Something taboo, therefore, acquires a sense of mystery and of desire. I can't have it, so I want it! Children are particularly adroit at pricking adult's bubbles of taboo. But taboos run much deeper in communities than simply topics which children discover can embarrass their parents. In Britain, for years after the second world war, to like anything Japanese was taboo, until so many people were watching Sony TVs and driving Nissans that the taboo largely disappeared. It's still there to a degree but younger generations have used their power of turning taboos on their heads so that Japanese products are highly revered!

Taboos as a Social Disease

Taboos can divide races and they can also divide communities. You only need to consider the unhappy situation in Northern Ireland where, to many in that polarized province, the religion and its concomitants of one section of the population are wholly (and holy) out of bounds to the other—and most of them think they have their God's word for it! That it's the same God is a taboo topic in many households. God, after all, has his own taboos, doesn't she!

Taboo is therefore linked to prejudice, in a constant race between chicken and egg. Of course, the causes run much more deeply, into the still-remembered mists of time when Ireland was a subjugate nation with a Protestant ascendancy over a numerically much larger Catholic underclass. It's what that much-admired President of Ireland, Mary Robinson, calls, with great grace, the burden of history. In many households, particularly in England (less so in Scotland), that burden of history is still a taboo subject because even to mention it in such a fashion smacks of support for insurgence and implicit support for them. I could go on, but it would be a digression!

Balancing Idealism and Realism to Open Minds

Interpreters have a strong streak of idealism, it goes with the job. Realism is something we have to impose upon ourselves. The chameleon qualities of the good interpreter result in her or his demonstrating both qualities in balance depending on the context and company. I believe, however, that interpretation—as I understand it—can help to heal rifts in communities whose folk memories, affiliations and upbringing have narrowed their thinking and polarized their attitudes. Interpretation can help to open minds, change images and bring about new perceptions.

My Belief Is Better than Your Belief

And so, for the first of my brief case studies, I want to describe a project we undertook in Northern Ireland, in Dungannon which has been the target of terror from both sides of a very divided local population. The town's main street runs down a ridge and is a no man's land—or an everyman's land. Here are the principal shops, public agency offices, and so on. It's neutral territory but was prey to attacks from both sides. For people standing in the square, it's Catholics to the right of them, Protestants to the left of them (the other way around if they're facing uphill!).

One thing Dungannon lacks is a good meeting and performance space. The best one at present is the Catholic Church Hall which, by a quirk of fate, is located in a staunchly Protestant area. The town, with a long and proud history in several ways, also lacks a focus for this history (which, of course, had two sides). Dungannon is also the home of one access point to an all-Ireland, computerized, genealogical service. This meets local enquiries and also those of people from the United States, Canada, and Australia, in particular, tracing their antecedents. (Ireland was partitioned only in 1922, still in living memory, and therefore records of births, etc. before then were of one people, not two. And, curiously, for many purposes, they are still one people, working and living together more than apart.)

In concert with other consultants, we assessed the feasibility of a new center which would combine four functions - a multipurpose hall-cum-theater, public agency offices, the genealogical service and a heritage interpretation role. We opted for a site on the spine of the town and named the proposed development, The Meridian Center.

With the support of the local council, in which power is shared between the two traditions, as they are politely called, to avoid other taboo terms, we proposed that the genealogy service should be a key part of the interpretation. By its very nature, it demonstrates the locations and spreads of families, of the Irish diaspora, and, by implication, the underlying political and cultural forces. Because, as an information source, it has no prejudice—facts are facts (or are they?)—we proposed that the presentation of the town's heritage should be undertaken on the same lines—through the presentation of agreed facts. If that sounds like a contradiction of interpretation, then so be it.

The objective is to allow local people—whose center it will be - to put their own interpretation on the facts. However, to provide more overt commentary, each tradition should contribute a short statement of its own history and values—as it sees them. This will allow all visitors, those with local awareness and those without, to assess and judge for themselves. But, more importantly, it will encourage people to understand why each culture holds different tenets dear and how these tenets have developed. With that understanding, it is hoped, will come realisation of how many sentiments are shared, even if beliefs differ. After all, there are many factors in common, not the least—fear. Time will tell if greater knowledge has brought less antipathy and more empathy.

From Civil Strife to International War

For six years, Britain and its allies fought Germany's search for supremacy. It's a difficult topic for interpreters because lives and memories are long. Berlin's Museum of German History records elements of the conflict quite differently from the Imperial War Museum in London. (It's curious, that title. Who accuses whom of Imperialism? But that, too, is a taboo topic in many British minds.) However, our task in the next case study was of a very local nature—how would we interpret the remains of a prisoner camp in South Wales? It would be made more difficult because only one out of 50 or so prefabricated concrete huts would be retained—for its value as an example of the building genre as much as for its role in a mass escape of German prisoners!

The camp was used toward the end of the war and was still occupied in 1947. Most of its inmates were ordinary soldiers but the senior German officer, because of his rank, was awaiting trial at Nuremberg (although himself only guilty by association). Once the war had ended in 1945, the prisoners became part of the community, working on local farms, visiting local shops. The General was a respected but feared customer in the tailor's where he ordered suits to be made immediately. He also went fox hunting with the South Glamorgan Hunt, returning to his quarters afterwards. There was a Comic Cuts aspect to it all. When 60 prisoners tunneled out, some stole the local doctor's car—and were helped to push start it by a friendly resident. When two were caught, the policeman's wife gave them tea before her husband returned them to the camp.

The camp was remembered, not as a symbol of containing Nazi aggrandizement and terror, but as a part of the town at a time when life was pretty topsy turvy. We proposed, therefore, that the main interpretive themes should relate to the prisoner's role in the local community— and vice versa —avoiding more than passing reference to the context which occasioned the camp. We wanted to recognize the realities of war without glorifying them, neither sanitising nor celebrating. We wanted to recognize the harshness of war without vilifying—or glorifying—those who fought.

The interpretation of the *site* was what was important. It could be interpreted easily in just one hut, with restoration of the tunnel and concentration of the key stories. It could draw on the folk memory of local people and prisoners—and the American GIs who used the camp in the run-up to D-Day. Children would be a main audience—indeed they had already demonstrated interest through project work. Most of all, perhaps, the underlying approach was to point to the absurdity of war by highlighting the many ridiculous aspects of the camp and its inmates which were both amusing and poignant. Perhaps most encouraging of all was the fact that many former inmates had made visits to the camp to revisit their sojourn among people who became friends. It's a little microcosm of history, really.

From War Crimes to Civil Crimes

Crime is a personal war against society. It's universally condemned as are the perpetrators. Society exacts penance—or retribution—from those it apprehends. "Lock 'em up and throw away the key. String 'em up for the worst crimes." We've all heard these views. Crime is forbidden and is therefore taboo. But criminals can become cult figures, almost revered. The taboo is alive and well in its alter ego. Prisons take on the demoniacal characters of their inmates yet Alcatraz is a national monument! In England, Dartmoor Prison has a similar, if unofficial, status. And it's still full of prisoners. People travel for miles to see this great corral of stone buildings on a bleak hillside. There's a vicarious thrill to be enjoyed from being so close to such dangerous men, a kind of voyeurism almost.

The prison service is conscious of Dartmoors attraction and recognizes it can gain more from this interest than from ignoring it. Some fine, former dairy buildings are now unused and we were asked, in harness with a design company, to see if a prison visitor center could be set up. After all, there's a museum at Gloucester Prison. But, right away, there were agreed rules. No chambers of horrors on one hand, no institutionalism on the other. It must neither be a Madame Tussaud's, playing the populist card, nor a mouthpiece for hard-line punitive ideals. In any case, whatever crimes they had committed, the men in the prison next door are real people, not half-fictional demons.

Few people really want to discuss crime and punishment, despite its fascination. Prison conditions are not a subject most people want to argue through. Like most taboo topics, they arouse disturbing conflicting prejudices or double standards which most people want to avoid revealing. We had to confront this in our proposals for interpretation. The prison's role had to be understood in its present day context and still be put in its historical context. Why is it there? And why is it still there? (It held American prisoners at one time, which adds an interesting dimension!)

In particular, the interpretive approach had to recognize the conflicts between the acts of individuals and the needs of society for stability, how society in the 1990s tries to resolve those conflicts when incarceration is deemed essential and how those in jail who wished to be helped could be helped. Interpretation and public relations were on a convergence course but we flagged up the dangers of the former, for whatever good reasons, affecting the candor of the latter. The interpretive approach must be direct and must avoid "smoothing over the wrinkles." The project is on course for implementation when our recommendations will be tested.

Prisons Today and Yesterday

Also on the stocks is our plan for interpreting a historic jail in Wicklow, Ireland. It's years since a door was slammed shut on a prisoner but, with cells on three floors, long galleries and stairs at each end, it represents people's idea of a traditional prison. Unlike Dartmoor, its prisoners were usually petty criminals, debtors, and drunks, rather than enemy soldiers or, later, murderers and the like. Like Dartmoor, though, it went through regimes of great brutality as well as more enlightened times. Was there the same problem in interpreting an empty building which visitors could explore rather than a full building which was inaccessible?

The answer is yes and no. The building had to be brought to life but it could not be treated as a vicarious, superficial experience. The records of many prisoners, even from 150 years ago, are still available. Many have descendants alive today. Irish memories are long and, therefore, as in Dartmoor, the real people of the past had to be accorded the respect, as individuals, in the same way as today's prisoners—whatever their crimes. Our approach was to use a mix of tableau, presentation, and live interpreters—a mix which has worked well in similar situations.

What we aimed to do was to expose the harshness of the social and legal systems which many people would like to forget (because, as memories are long, they all have associations, pro and con). We wanted to explain how a simple misdemeanor like stealing a loaf could provoke months of body-wracking and spirit-breaking half-life. Was this a society in fear of itself or one with excessive moral standards? Unless visitors confronted this, their visit would be vapid, just an entertainment. Of course the experience had to be entertaining in the best sense—it must not sentence visitors to an hour of social education, but it had to provoke as well as reveal if it was to be satisfying.

Energetic Provocation

Nothing stirs up more heat than the debate about nuclear power. Most arguments stem from ignorance, prejudice, and miss-information, and the association with weapons of mass destruction. There is no doubt that dealing with the manufacture, use, recycling or waste storage of nuclear fuel is a potentially dangerous task. Equally, there is no doubt that nuclear fuel, 97% reusable, is at face value, one of the most sustainable. We were appointed, with design colleagues, to conceive and construct a new exhibition at Sellafield, Britain's main nuclear fuel recovery and waste management site. What was our approach when nuclear power represented a taboo for so many people?

Simply, we said we would do the job only if we could be honest on behalf of the client, who agreed. The mistakes, the accidents, the near-things had to be dealt with, in a sense to act as exceptions which proved the safety rule. We knew, from extensive market research, that visitors to Sellafield came from both pro and anti camps, that most left at least a little more pro, but some indeed left more anti. We set out a complex mix of interpretive approaches based on simplifying the science and demystifying the technology. The family audience was vital as the site is close to a very popular National Park and so much of the attraction was aimed at young people—to catch their parents as well.

The budget allowed for a number of spectacular exhibits and a great many interactive displays. We used a Mighty Atom character to catch the imagination and act as a built-in interpreter. The company employs a significant number of enablers to help visitors understand the processes involved and precautions taken. Early research shows that visitors have thoroughly enjoyed their visit (a primary objective), have learned a lot from the exhibits (a key objective), and are more able to make judgments on the basis of understanding, rather than preconception.

Inner Revelation

My first case study touched upon religion which is a dinner-table taboo for most folk or, conversely, an after-dinner battleground for the taboo hunter-killers. We have recently completed a pilgrimage center for the Roman Catholic Church in Scotland. It is there to explain the motivation for, and fulfillment from, pilgrimage, not to act as a center for pilgrims as such. However, it is built beside a major Marian Shrine and other people's shrines, particularly in Scotland (as in Northern Ireland) can release a whole flock of taboos into the air.

The brief grew from a wish to discuss Catholic pilgrimage to a need to offer an ecumenical picture. This made the challenge greater—more taboos, or prejudices, to overcome, but it would widen the audience. Our approach was simple; we would not attempt to chronicle pilgrimage in any depth, but to indicate the depth of a pilgrim's motives and aspirations and encourage visitors to contemplate these and to find out more. We took the view that pilgrimage today encompasses more than religion. Folk make pilgrimages to the homes of their ancestors—hence, the Irish genealogy project; or to great landscapes like national parks, or to football grounds, art galleries, and so on. As space was limited, we relied largely on graphics. We spent many days honing our words as others have honed catechisms and litanies. Our design colleagues caught the spirit of our approach and kept their presentation simple but extraordinarily beautiful. A stained glass artist has produced an inspirational and memorable "window on pilgrimage." Collectively, and like it or not, we appear to have created a place which, even after three days, children said they would like to come back to because it was full of spiritual serenity, as one said. The taboo on religion seems to have been lifted because we talked principally about people. Perhaps all taboos can be tackled that way.

And Now for Something Completely Different

Let me end by moving from the sublime to what some call the ridiculous—a heritage center at a sewage treatment works. It's worth a few guffaws, isn't it? Isn't that how many taboo topics are treated, with embarrassed laughs or giggles. Every one of us creates sewage and yet for most of us, at least in so-called developed society, your sewage (and mine) is a taboo topic except in the abstract. Who wants a heritage center about it? Well, when the original plant is 100 years old, and was a industry leader, isn't it worth reminding folk that dealing with the subject of sewage is as important as dealing with the stuff itself? This is doubly so when the new plant is also state-of-the-art.

How did we go about the interpretive approach? Well, to a degree we did pick up on the giggle-factor because making people laugh is a good way of getting their attention and it also relates to their own way of dealing with the topic. The name of the center may not end up with our original proposal "Flushed with Pride" but some of this light-hearted approach will work its way through the system, if you'll forgive the analogy—which I won't pursue.

But there is, of course, a much more serious side to it all. Public health and hygiene are paramount objectives of any public authority, waste management (as in the nuclear industry) arouses considerable questions, the sheer cost of dealing with what the Chinese call night soil needs to be justified. And, behind the silly smiles and schoolboy jokes, people are interested but are usually too shy to ask—perhaps they think they should know what really happens after they pull the plug. What's for sure is that a few taboos will be swept away in a tide of carefully targeted displays and interactives or, more correctly, treated and disposed of through an efficient interpretive infrastructure!

Self-examination

All the topics I've mentioned reflect taboos close to everyone's life. As I've gone through the projects, you will have started to make personal judgements and, I hope, to examine these judgements. Self-examination is part of the interpretive process, I believe—we have to rid ourselves of our taboos and prejudices if we are to interpret successfully and, in the context of this topic, if we are to help heal differences or dispel others' taboos. What do you think? Can we, should we tackle taboos? How would *you* go about it? Has Touchstone gone about it the right way?

I acknowledge the help of Nicola Sheppard, Napier University, Edinburgh, in the preparation of this paper.

Arts in Interpretation

Charles M. Russell was born in St. Louis in 1864. By the age of 16, he was lured to the Montana Territory and ended up herding sheep and cowboying in the Judith Basin. With the saddle as his easel, Russell accurately recorded his observations and experiences in sketches, paintings and sculptures. Today, Russell's works hang in museums and art collections all over the world. He remains one of America's favorite cowboy artists.

BEYOND ILLUSTRATION: A COLLABORATIVE ENVIRONMENTAL ARTWORK

Lynne Hull and Ann Tevy Rosenthal
Environmental Artists
P.O. Box 1239, Fort Collins, CO 80522
(970)416-1881

***ABSTRACT**: Join two environmental artists creating an interactive artwork exploring connections between our consumer lifestyles and environmental degradation. Reuse this idea at your facility, recycling the format to fit your needs, and reducing your reliance on permanent, expensive materials. No art experience needed, just your knowledge of natural resources and a pen.*

***KEYWORDS**: Environmental art, lifestyles, consumer impact, education, interactive interpretation.*

Artists Lynne Hull and Ann Tevy Rosenthal have been discussing the impact of our consumer lifestyles on the environment and questioning why it is so difficult for people to make lifestyle changes on behalf of the environmental preservation most of them claim to support. Our first premise is that it is difficult to see the links between our lives and our planet. We have developed an artwork which will help us, you, and your home audience better see the chain of impact between such things as what we eat for breakfast and why the rainforest is disappearing, or how buying gold jewelry results in water pollution. We will present images of lifestyle choices and of environmental degradation, linked by metal chains. But we need your knowledge of natural resources to fill out the artwork! Participants will inform us via filling out and organizing the "price tags" to trace the real costs of our consumerism.

Our second premise is that each of us knows a few of the steps in the chains of events, but we don't see the whole event. We feel that combining knowledge can help clarify the situation for individuals and perhaps build community concerns in the process. Please come with your pen to help us track down the "costs" of our high-impact lifestyles. Actually the piece will never be finished, because you will take the idea back to your facility and recreate your version of it, and your audience will participate in creating an "act locally, impact locally and globally" interpretive artwork specific to your situation...and afterwards change can begin.

BEYOND ILLUSTRATION: THE NUTS AND BOLTS OF PROGRAMMING WITH ARTISTS

Lynne Hull
Environmental Artist
P.O. Box 1239, Fort Collins, CO 80522
(970)416-1881

Panelists:
Lynne Hull, Environmental Artist
David Cowan, Visual Information Specialist, Yellowstone National Park
Gillian Binks, Interpretive Planner, Centre for Environmental Interpretation,
Manchester Metropolitan University, England

ABSTRACT: *Panelists will give an overview of private, agency, and public programs where environmental art has added a new component to traditional interpretation, then discuss ways artists can be brought into site programming. Learn the basics of adding artists and artwork to your interpretive program. Artists, interpreters, and arts Administrators will share their experience in starting collaborations between art and interpretation and using artists as an interpretive resource.*

A basic "how to" and "how not to" will help you get "beyond illustration" into exciting interpretive art.

KEYWORDS: *Environmental art, artist, interpretive collaborations, partnerships.*

Introduction

In the new field of environmental art, artists are looking at natural systems, trying to communicate cause, effect, connection, trying to convey a sense of the integrated interdependent ecological systems, even creating artworks which interact with ecology. In short, their aims overlap with those of interpreters, often with an added emotional and aesthetic component which may inspire and reveal nature and history to viewers in ways difficult to achieve by more traditional interpretive approaches.

This panel presents several artists and administrators who have participated in projects and programs in which artists have played an interpretive role. They will share some of the exciting artwork with you, then discuss the "Nuts and Bolts" of starting programming and collaborating with artists. Why we want to collaborate; what artists and interpreters need from each other; what artists need to produce a successful site project; where to find artists; where to find funding; and a few pitfalls to avoid in "planning for success."

Lynne Hull has created outdoor sculptures which contribute to wildlife habitat and raise human awareness of wildlife issues and the need for biodiversity. She will present some of her interpretive projects, including "The Exiled Oxbow," a memorial to the loss of wetlands, a work in progress in Salina, Kansas. Her experience as "the first artist in residence" at several sites and her research on environmental artwork worldwide will inform her presentation. Her articles on art as interpretation have appeared in *Legacy* magazine.

Gillian Binks is an interpretive planner and co-director of the Centre for Environmental Interpretation at Manchester Metropolitan University in England. Her innovative interpretive plans have often had an arts component. She is currently involved in a landscape assessment project for Surrey with the Countryside Commission, which includes an experiment in involving artists, sympathetic to the idea of appraising landscape, in the process. She will present some of the methodology behind these projects, and touch briefly on other interpreter/artist collaborations in the United Kingdom, where this combination has become a popular and effective practice.

David Cowan is the visual information specialist for Yellowstone National Park. In that role he developed and coordinated an innovative artist in residence program for Yellowstone National Park which resulted in exciting artworks in the park for several summers, and raised a number of issues for the Park administration regarding the role of artists in the Park. He currently directs "Imagine Yellowstone," an innovative children's art program sponsored by and exhibited in the park.

COMPELLING STORIES

Connie Rudd
Assistant Superintendent
Shenandoah National Park
National Park Service
Route 4, Box 348
Luray, VA 22835-9051

ABSTRACT: *The "compelling story" concept is something with which we are already familiar, and it is what many of the best interpreters already do. It is an opportunity for interpreters to further embrace Freeman Tilden's Principles of Interpretation, and to apply them in innovative, thought provoking ways. By putting our stories in a broader context, and by interpreting well, our audiences become participants, not spectators. As a result visitors develop a deeper commitment to the stewardship of natural and cultural resources.*

KEYWORDS: *Compelling stories, thematic interpretation, interpretive context.*

Introduction

Compelling stories are at the heart of thematic interpretation, which focus our messages on the essential, most relevant stories we have to tell, and how those stories fit into a larger scientific, historic, social, or economic context.

What Are Compelling Stories?

Compelling stories represent the greater meaning or significance of resources being interpreted. Rather than stopping with a defined "set of facts" or information, compelling stories appeal to universal questions, moral dilemmas, beliefs, drama, and circumstances that make up the human condition. Much like Greek myths, compelling stories provide a vehicle to help audiences understand that which is larger than common perceptions. Well defined and well told, compelling stories convey a powerful sense of place, a connectedness to heritage, *raison d'être.*

The compelling story concept should be approached by professional interpreters on two levels:

- As a skill, or a way of "seeing" for each individual interpreter.
- As a vehicle for a group of interpreters or unit staff to focus more clearly on the meaning and significance of unit resources.

Compelling stories are based on rich and accurate subject matter knowledge and take that subject matter expertise beyond the obvious to help visitors see universal meanings, much as an artist helps us see with new eyes.

How to Identify Compelling Stories

At the heart of the compelling stories concept are three of Freeman Tilden's principles:

- Interpretation is *revelation* based upon information.
- Interpretation is *provocation,* not instruction.
- Interpretation presents *the whole,* rather than a part.

To help you begin the process of identifying compelling stories associated with your resources, consider a story or a "set" of information that you currently interpret. Now, reexamine Tilden's principles listed above and consider the following: (a) What is the *revelation* you seek for program participants? (b) What thoughts or actions do you hope to *provoke?* (c) What *whole* are you trying to communicate to visitors? (d) Why does your agency believe interpretation is important?

Once you have answered these questions, put your thoughts aside for a while and consider how your resources and stories are linked to larger interpretive contexts.

Linking Resources and Interpretation to a Larger Interpretive Context

As professional interpreters, we are integral in the preservation of a variety of resources, such as:

Objects: Museum collections, exhibits, and research collections are filled with original objects of great significance. These objects only have meaning, however, when placed in a larger context—their significance must be linked to ideas and values through education.

Places: From vast wilderness to intimate historic sites, the sense of place has potential for powerful lessons. Just occurred can have a "transforming" effect on the audience.

Events: The preservation of events that happened in the past or are happening in the present, often over a span of time and geography, can be key resources. What happened may be as important as where it happened.

These three things represent *tangible*, primary resources. Too often, our interpretation stops at an explanation of what these things are and fail to link these tangible resources to intangible resources and a larger context:

Processes: The protection and preservation of process is a critical responsibility of interpretation. "Process" ranges from massive geologic process, to social and economic process as part of heritage and culture. The conservation of living cultures is as important as the interpretation of ancient cultures, just as the protection of natural processes is critical to the maintenance of a healthy planet. Any ecosystem interpretation must link objects and places and events to the larger processes of which they (and we) are a part.

Systems: Systems can be many things, from living, biological systems, to social systems and systems of government. Every resource is a part of a larger system.

Ideas: Ideas are powerful notions which gave birth to a nation, drove it to Civil War, caused conflict with native peoples and the land itself. "Ideas" encompass concepts of wilderness, preservation, and decision making. Ideas define heritage, culture, and science. Every resource you interpret is a sources of important, compelling ideas.

Values: At the very foundation of any interpretation are values. These are the reasons why people cared, care now, or might come to care about your resources in the future. These values often conflict in the present, as they might have been in conflict in the past. In many cases, it is the conflict of values that caused a site to have significance in the first place. These values are always subjective and often appeal to universal issues. It is your challenge to approach the values associated with your resources in such a manner that will challenge your audience to determine for themselves their value.

Take a few moments to consider *one* object, place or event you presently interpret. Now, connect it to its larger context of process, systems, ideas, and values. Is there a story that emerges from this connection? Does that connection appeal to a universal meaning?

Identifying Universal Meaning

"The only real voyage of discovery consists not in seeking new landscapes, but in having new eyes." —*Marcel Proust*

Indeed, the magic of interpretation, the telling of compelling stories, very often taps into universal conditions, or the understanding of universal meanings or significance. Tilden called it revelation through interpretation of the whole.

Do your compelling stories link to universal conditions such as:

- Conflict between people or cultures
- Conflict between people and natural systems
- Internal conflicts within individuals
- Conflict resolution or nonresolution
- Consequences of action or consequences of inaction
- Commitment of people to a set of values that caused action

Professional interpreters and educators play powerful roles in preserving and protecting the nation's resources by telling how resources helped shape the nation's values, character and experience. Compelling interpretation helps a diverse public understand the value of a newborn grizzly cub, how we develop and consume energy, the ranch where Theodore Roosevelt developed his conservation ethic, artifacts of ancient cultures, medical practices during the Civil War, and how land can and should be reclaimed after mining. It tells of ecosystems, the politics of ecology, and challenges our value system in trade-off decisions we must make every day.

With each interpretive encounter, we have the opportunity to make a larger impact. Compelling stories, compellingly told, will be remembered for a lifetime.

This is the "art" of interpretation.

THE COSTUMED CHARACTER: FROM BRASS BUTTONS TO BUTTERFLIES

Ray Morris
Chief, Interpretation and Resources Management
National Park Service
Fort Frederick National Monument
Route 9, Box 286-C
St. Simons Island, GA 31522-9710

Marsha Knittig
Assistant Exhibit Program Developer
Minnesota Historical Society
345 Kellogg Blvd. W.
St. Paul, MN 55102-1906

ABSTRACT: *The focus of this article is on the analytical decision process involved in deciding whether or not to proceed with a living history or living natural history interpretive program at your institution. This approach will help you define your interpretive objectives and planning process for this activity. This strategy will center on concept development, assessing local competencies, funding, research techniques, and other vital program considerations.*

KEYWORDS: *Living history, living natural history, decision process, costumed interpretation, first person living history, third-person living history, interpretive theater.*

Overview

The term *living history* is well defined and widely accepted as being an effective interpretive technique among cultural and military historians. This paper is about the process on making important program decisions. This strategy involves questions about available resources, staffing expertise, original research incorporation, budgetary considerations, and choosing the appropriate living history technique. Organizations whose focus is on natural history, such as nature centers, zoos, and aquaria, would do well to pay close attention to the process that cultural history institutions have made in assessing and insuring the quality of living history—and learn from it.

With living history techniques, the interpreter attempts to impart knowledge and engage the interest and imagination of the visitor by simulating as accurately as possible historical or natural history appearances, manners, occupations, processes, and attitudes.

Living history programs are not an attempt to literally recreate the past including natural flora or fauna, an obvious impossibility. They are an interpretive technique designed to stimulate the visitor's intellectual and emotional involvement with the resource through the creation of well-documented, historically accurate impressions of historical events and people and environmental education topics.

Note: A substantive segment of this paper is taken directly from the new draft living history guidelines from the National Park Guideline No. 6—Guideline for Interpretation. This segment is a culmination of several years of work by dozens of employees and volunteers who daily work in living history programs within the National Park System.

Definitions

Living history programs fall into two general categories:

First-person (or role-playing) living history programs. In these programs, the interpreter assumes the role, character, and appearance of either a particular or a generic historical figure. In encounters with visitors, the interpreter acts and speaks as though he or she were actually that character. This technique is particularly effective when trying to convey an understanding of the feelings, emotions, or attitudes of persons from the past.

Interpreters conducting first-person living history programs must project an historically accurate impression in terms of historical knowledge, physical appearance, clothing, objects used, speech patterns, attitudes, etc. Note: These programs are referred to as first-person living history programs because the interpreter uses first-person personal pronouns such as "I" and "we" when speaking to the visitors (e.g., "I was really pleased when I saw how much those soldiers enjoyed my cooking.").

Third-person living history programs. In these programs, the interpreter utilizes period reproduction clothing and objects, but does not attempt to assume an historical personae. The interpreter retains his or her own personality throughout the program and interacts with the visitor as he or she normally would. Interpreters in third person living history programs must wear historically accurate reproduction clothing and strive to project an historically accurate appearance, but because they are not attempting to portray actual persons from the past, their personal appearance need not exactly reflect the appearance of historical personages. *However,* if anomalies in appearance between the historic reality and contemporary interpreters are so extreme as to project obviously inaccurate historical impressions and cause confusion in the minds of visitors; or if the interpreter's appearance elicits an inappropriately humorous response or encourages disrespect toward those of the past, then this technique should not be used. In those situations, the program should be presented by an interpreter in normal institutional uniform or contemporary clothing. The visitor's attention should always be focused on the interpretive story, not preoccupied with trying to understand or ignore confusing or misleading aspects of the interpreter's impression. Note: These programs are referred to as third person living history programs because the interpreter uses third person personal pronouns such as "they," "he," or "she" when presenting the interpretive message to the visitor (e.g., "This is the path he took to the field every day.").

Costumed Characters and Living History

Whether a zoo calls its big orange, sucker-encrusted carpet foam sea star a costumed character or a costumed interpreter, or whether the program technique is referred to as interpretive theater or role playing, the decisions involved in developing that sea star run parallel to those of developing a civil war soldier.

While military and cultural history interpreters would cringe to hear their definition for a first-person living history program used to evaluate a monarch butterfly, it can be done and it works: living *natural* history is a technique designed to stimulate the visitor's intellectual and emotional involvement through the creation of well-documented, accurate information.

The advantages and disadvantages of first-person living history programs are well-documented, and with a few word changes, they can apply to *talking animals.* The pluses of letting the animals talk and share their ideas, attitudes, and perspectives far outweigh the risks of anthropomorphism and misinformation if it is done well.

It is the responsibility of interpretation to educate the public about the significance of the resource and to place it within its natural and cultural context. To do this well, interpreters must recognize that visitors differ enormously in background, interest, learning style, and desire. Because visitors deal with the resource subjectively, successful interpretive programs do not depend on a single method, technique, or delivery vehicle. Interpretation must use a variety of tools, such as living history, to communicate compelling stories and make the values and meanings of the resource accessible to a diverse public. When using personal services interpretation, the varying skills and abilities of the individual interpreters presenting the program must also be considered. Good interpretive planning requires the manager to skillfully assess the needs of the visitor, the abilities of the available staff, and the inherent characteristics of the various interpretive techniques to determine which techniques will deliver the interpretive message to the public in the most compelling and cost effective manner.

Examples of Effective Living History/Living Natural History Programs

Castillo de San Marcos National Monument. The Castillo de San Marcos, constructed from 1672 to 1695, is the oldest masonry fortress in the continental United States. Today the National Park Service has a comprehensive living history interpretive program at this site. The program is varied and uses both first- and third-person living history techniques including the following examples. The weekend artillery demonstration on the top of the fort is one of the hallmark events in the "nation's oldest city" and the drill is done entirely in Spanish, recreating preparations in 1740 when unsuccessful British invaders from Georgia and South Carolina would lay siege to the city for over one month. The actual drill is explained by uniformed National Park Service interpreters or done in third person by a living history interpreter or volunteer.

Another interpretive presentation is a scripted living history *theater* presentation called "Torchlight." Visitors are led at night into Spanish St. Augustine in the mid–18th century. Once they are led into the walls of the fort all 20th century intrusions to the historic scene are completely absent. One soldier speaking broken English is the visitors only link to their language. Interpretive staff and Spanish-speaking volunteers make up the 30 to 40 person garrison staff.

Costumed characters at the Minnesota Zoo. The costumed characters at the Minnesota Zoo are part of the Theater in the Wild, in Discovery Programs. They evolved from silent characters in special event vignettes into open-faced, walking, talking animals that can be found interacting with visitors on the trails, making cameo appearances at camps and classes, greeting and promoting at special events and new exhibits, and performing outreach programs. Wherever they go, their job is *to strengthen the bond between people and the living earth.* The zoo's mission is their mission.

This is natural history theater—eco-theater—that does stand up to the close scrutiny of a checklist of critical elements. It is first person interpretation based on research, authenticity, and attention to detail that invites visitors to suspend belief and enter into a carefully crafted magical experience. Under the costumes are skilled *players* who are staff, volunteers, and contract performers. They use gentle humor and their knowledge of wildlife issues (from prepared scripts and background information) to lead zoo visitors to awareness, understanding, and appreciation of the world's wildlife.

Theater in the Wild, officially established as a program in 1993, is not exempt from visiting the questions that help to evaluate whether a living history technique is appropriate. Those questions that are part of the decision-making process can be asked anytime, even for sea stars and butterflies.

Questions to Be Asked When Considering Whether Living History Is the Most Appropriate Technique to Use

Advantages and disadvantages. Listed below are some of the advantages and disadvantages of living history. These questions should be carefully considered when evaluating the appropriateness of using living history techniques in a program.

Advantages:

- Excellent at interpreting emotions, feelings, and attitudes of the past

- Puts a human face on history

- Has strong multisensory impact

- Allows the visitor to actually see things and activities that are difficult to visualize

- Reveals details of life in the past not easily accessible in other ways

- Highly visual and attention-grabbing

- Allows visitors to actively interact with "someone from the past," or a "plant" or "animal"

Disadvantages:

- Need for specialized interpretive skills

- Expensive to acquire and maintain necessary clothing and objects

- Labor intensive for staff in terms of research, planning, monitoring, and evaluating

- Can cause confusion in visitors' minds if done poorly or improperly

- Tendency to interpret minutiae instead of helping visitors' to understand the significance of the resource

- Tendency for the visitors to be so beguiled by the interpreter's "quaint" clothing or actions that they miss the interpretive message altogether

- Tendency for anachronisms and inaccuracies to slip into programs over time

Decision Process Questions for Managers of Living History Presentations

1. Has the park or museum identified its interpretive themes in an comprehensive manner?

2. Have "individual service plans" (ISPs) been developed for all living history programs?

3. Do any of the ISPs recommend the use of living history techniques?

4. Which interpretive theme(s) will the program illustrate? Are these themes identified in the institution's overall themes and goals?

5. How exactly would the wearing of period clothing by the interpreter improve the visitor's understanding of the theme(s)?

6. Could the interpretive message be conveyed to the visitor just as effectively by an interpreter in uniform or contemporary clothing?

7. Does the park or museum have reputable research to document the scenarios, personages, etc. it wishes to portray and was this research done according to scholarly standards?

8. Have clear standards been defined in the program's ISP in terms of characters to be portrayed, clothing to be worn, information to be used, personal appearance, etc.?

9. Have interpreters and volunteers demonstrated competency in living history skills?

10. Does the interpretive staff have the time needed to manage the program in terms evaluating competencies, monitoring programs, updating research, training, maintaining clothing and objects collections, coordinating activities of outside groups, etc.?

11. Has a program evaluation or "trial run" of the program shown that it does indeed convey the desired message?

12. Does the park or museum have the funds to maintain and sustain the program?

13. Is it possible or likely that the program will seriously impact or damage the resource?

14. Is the program cost effective?

Summary

Living history and living natural history can be very effective tools to a skilled interpreter. These techniques can also be a major draw to a park/museum/zoo as many people enjoy this technique. However, it is the most expensive form of personal services interpretation that is routinely delivered and often done without attention to institutional interpretive themes and goals. By adopting a systematic process to *evaluate* your living history presentation proposals, you can define whether this is your *best* use of scarce manpower and dollars during this time of tight budgets and increased public scrutiny of public and non-profit private institutions.

References Cited

Anderson, William T., and Shirley Payne Low. 1987. *Interpretation of Historic Sites*. 2nd ed. Nashville: American Association for State and Local History.

National Park Service Guideline No. 6—Guideline for Interpretation (Draft). 1996. Washington, D.C.: National Park Service. Chapter IV (Draft): Interpretive Program-Program Services. Section B: Guidelines Applicable to Specific Personal Services Techniques. Appendix B : Evaluating the Suitability of Personal Services Techniques (Draft).

Tilden, Freeman. 1977. *Interpreting Our Heritage*. 3rd ed. Chapel Hill: University of North Carolina Press.

MEET A 1933 JUNIOR NATURALIST

Douglas Bruce McHenry
President
Team Interpretation, Inc.
15 Chilton Street
Belmont, MA 02178

***ABSTRACT**: Donald Edward McHenry, junior naturalist at Grand Canyon National Park, visits us to talk about the new education programs of the National Park Service in the year 1933.*

***KEYWORDS**: Live presentation, first-person living history.*

Introduction (setting the scene)
Hello, ladies and gentlemen. Thank you for inviting me to this workshop here in Billings, Montana.

I bring you greetings from Grand Canyon National Park and Superintendent Raymond Tillatson, Assistant Superintendent James Lloyd, and Park Naturalist Edwin McKee.

Traveling by train nowadays is so much faster and more comfortable. I only left Grand Canyon day before yesterday. The new trains are equipped with dining cars and sleeping cars making long distance travel more enjoyable.

I am delighted to be here to speak to you about the national parks. A lot has happened in the national parks since Congress established Yellowstone as the first national park 61 years ago in 1872. We now have 64 national parks and national monuments in the West. For over 40 years, these national parks were administered for the Secretary of the Interior by appointed wardens, the U.S. Forest Service, and even the U.S. Army.

Just 17 years ago, in 1916, a new agency in the Department of the Interior, the National Park Service, was established by Congress.

There is a great story of how the National Park Service was born. Steve Mather, a wealthy California businessman in Borax, had been visiting national parks for several years. Although he loved the national parks he felt that they were being run very poorly. There was also a vast difference in how each national park was being administrated, causing a lack of uniformity in enforcing the regulations.

Steve Mather wrote to the Secretary of the Interior, Franklin K. Lane, a classmate from Stanford University, complaining. Secretary Lane wrote back and suggested that if Steve Mather didn't like how the national parks were run, he should come to Washington and run them for the Secretary. Steve Mather went to Washington and worked on founding the National Park Service, which was established by Congress and signed by the President August 25, 1916. Steve Mather became its first director.

In 1922, just 11 years ago, an experimental nature guide service was started in Yosemite. It was run by three people; Ansel Hall, a Park Ranger, and two graduate students from UC–Berkeley, Harold Bryant and Carl Rusell. This new educational service was so popular that it was soon expanded to other national parks. A new division of Natural History Research and Education was established at UC–Berkeley under the direction of Dr. Harold Bryant.

During the early 1930s there was a expansion of the research and education services. Most of the 64 national parks had a park naturalist heading up the programs. Soon the NPS was recruiting for Junior Naturalists to work directly under the park naturalists. All of the recruitment was done through the colleges and universities. Only people with graduate degrees were considered.

I became familiar with the national parks while spending a summer driving tour buses in Rocky Mountain National Park, Colorado, for a concessionaire. We were to give guided tours of the park and its flora and fauna. That summer's experience was to change my career.

I was teaching botany at Oklahoma A&M, a few years later, when I saw the bulletin announcing open examinations for junior naturalists in several national parks. Recalling my experience in Rocky Mountain National Park, I applied for the examination. It was given in St. Louis, so I rode my motorcycle there and back. I was appointed, not to Rocky Mountain NP as I had hoped, but to Grand Canyon NP. I reported to Grand Canyon NP in early January last year after our son Bruce was born. Four months later Bona May and Bruce joined me at Grand Canyon NP.

Ranger Division (background information)
During the first 44 years, wardens and rangers were running most national parks. Often they were hired locally, and most were cowboys. There were few qualifications for being a ranger. They had to be able to ride and shoot and

were required to furnish their own horse and rifle. There were no educational requirements and most had about a 5th grade education at best. They patrolled the parks, ranging far afield. They rounded up stray livestock, cleared trails, and enforced the law. They were rugged and self-reliant.

Yellowstone National Park was run by the U.S. Army as were a few others. The soldiers patrolled the park rounding up stray livestock, cleared trails, and enforced the laws. Our present uniform had its origins in the Army uniform of the day. The flat-brimmed hat, riding britches, and boots or legions are similar to those worn by the soldiers and officers.

Grand Canyon National Park was first a national forest, then a national monument, and for many years it was run by the U.S. Forest Service. The green color of our new uniform came from the color of the forest rangers' uniform.

The 1916 Organic Act changed most of what the first 44 years had wrought. Park rangers not only have to have at least a 5th grade education, they must be able to cipher and read. They still have to be able to ride and shoot, but the government supplies the horses and rifles. They take on other duties such as construction and maintenance of all buildings, water systems, and vehicles. Greater emphasis is placed on protecting the forests from wild fires, protecting the wildlife, and enforcing the laws. Park rangers are classified as sub-professionals and have pay grades SP-1 ($25/month) through SP-10 ($75/month). The superintendent is ranger SP-10.

Natural History Research and Education Division
This division has grown out of the Yosemite experiment 11 years ago, in 1922. At first there were naturalists in only a few of the big parks like Yosemite, Yellowstone, Mount Rainer, Glacier, Sequoia, Kings Canyon, and Mesa Verde. Grand Canyon didn't have a naturalist until just 6 years ago, and I am the first junior naturalist. Unlike rangers, naturalists are classified as professionals and have pay grades P-1 ($100/month w/B.S.) through P-3 ($150/month w/Ph.D.).

Our Naturalist Program at Grand Canyon is expanding. Last year 105,000 tourists came to the park. Our education program includes geology lectures at Yavapai Observation, daily nature walks along the Rim Trail, campfire talks each evening in the campground, lodge talks at the El Tovar Hotel and the Bright Angel Lodge on weekends, and auto caravans along the West Rim Drive daily. We still find time to conduct research and collect specimens. We are still inventorying the geology and the flora and fauna of the park. My job is more challenging than the teaching job and it pays nearly twice as much at a P-2 ($125/month w/M.S.).

Life in Grand Canyon National Park
I am often asked what life in Grand Canyon National Park is like for those who live and work there.

Housing is plain and simple. We live in a two-room cottage at 67 Juniper Hill near the water tower. It has coal-oil for heat, cooking, and lamps. We have electricity for a few hours each night. Bruce enjoys playing outside with sticks and pine cones.

Food is ordered by mail from the Babbitt Brothers Land and Cattle Co. warehouse in Flagstaff. Once a week the chief clerk, Elbert Cox, drives the park truck into Flagstaff and picks up our orders. The Babbitts are building a store in Grand Canyon Village across from the ranger station. This will make it easier for the 40 residents.

Water is a real problem on the south rim. It is brought in by railroad tank car and pumped up into the water tower. A new pipe line is under construction from the spring at Indian Garden 3,000 feet down into the canyon. Electricity is made by a diesel generator which is located near the railroad where the oil is brought in. We have electricity during the day, but for about 3 hours each evening.

Maintenance of roads, trails, buildings, and utilities is done by the rangers. President Roosevelt recently established the Civilian Conservation Corps (CCC) and they have just set up four camps in the park, one on the north rim, one at Phantom Ranch in the canyon near the Colorado River, and two on the south rim. They will help the rangers with the construction of roads and trails and buildings and utilities.

Transportation for the tourists is largely by train. The Santa Fe arrives daily at the South Rim from Williams Junction, about 60 miles south. In the Park the Fred Harvey Co., the principal concessionaire, has new Pierce Arrow touring buses which make tours on the West and East Rim Drives. The entrance road and the West Rim Drive are the only paved roads in the park. Few employees own an automobile because gasoline is so expensive at $0.14/gallon. There is a small primitive airport near Red Butte and a few of the new Ford Tri-motors have experimented flying across to the north rim and even below the rims.

Questions (open to questions from the participants staying in character)
I would welcome your questions about the national park and Grand Canyon National Park.

Discussion (stepping out of character)
Look at the uses of living history and its effectiveness. We will discuss the different types of presentations and their merits. We will discuss how you do your research for a living history program.

A PICTURE IS WORTH A THOUSAND INTERPRETIVE PROGRAMS

Jodi Morris, Interpreter
Arkansas State Parks
Parkin Archeological State Park
P.O. Box 1110
Parkin, AR 72373

ABSTRACT: *Art can become interpretation when it is incorporated into the interpretive plan for a site. Customized, commissioned murals and paintings as well as inexpensive posters, prints, and traveling exhibits can provide the basis for new interpretive programs and exhibits as well as the extra ingredient needed to set off existing programs.*

KEYWORDS: *Art-based programs, murals, posters, exhibits, audiovisual.*

Art for Interpretation's Sake

How do you videotape a battle that has already been won and lost? How do you photograph an environment which has been irrevocably altered? How do you guide people through a village which centuries ago dissolved into little more than ashes and dust? How do you summon the ghosts at will?

When it's your job to interpret what was, as well as what is, there is no substitute for a blank canvas, a skilled artist and a vivid imagination. That's why Parkin Archeological State Park spent a fourth of its entire exhibit budget for a brand new park on a mural, a decision which has proven to be a very shrewd investment. Our success with the mural has also prompted us to develop interpretive programs around many other artworks including free to inexpensive posters and prints and traveling exhibits available from area museums.

The Big Picture

The Caqui mural is approximately 8 feet high and 10 feet long. Its theme is a typical June day in the life of the Mississippi period (AD 1000 to 1550) Native American village known to the Hernando de Soto expedition as Casqui. The mural was created by Arkansas artist Becky Whitsell on commission for Parkin Archeological State Park, Arkansas's newest state park, which encompasses the village's archeological site.

Putting Art to Work

The Casqui mural was intended, and has proven to be, a major interpretive tool. Here are just a few ways it has been incorporated into our programming.

Tilden's First Principle

By simply challenging visitors to find the more than 120 villagers at work, rest, and play within the mural's depths, we are able to communicate the most important concept of our mission statement. Simply put, archaeology is about people. It isn't a treasure hunt. It isn't simply a dusty collection of old stones and bones. It's the story of a people whose lives in their own ways were as rich and complex, as happy and sad as our own. The oversize painting puts the small collection of artifacts featured in the museum in proper perspective and helps break stereotypes of Native American cultures by highlighting the many different activities that were part of village life.

"I Spy" Discussion Programs

Depending on the age level and curriculum goals, these fifteen minute discussion programs may focus on art appreciation, natural resources, or village life. By using a "Where's Waldo" approach, students are encouraged to discover and discuss these subjects rather than receiving a lecture. (Example: "Two of the villagers in this mural have their eyes on you. Can you spy them? What are they doing? How many of you have ever done that?")

Site Orientation

We have other illustrations which serve essentially as maps of the site and diagrams of the village layout, but the mural shows Casqui in relation to its environment, eloquently illustrating why the Parkin site was a strategic location for a large village. Actually, the village itself can scarcely be seen, the mural focuses on the many fields of corn (which is where the Visitor Center is now located), the native "orchard" of fruits and nuts, the abundance of wildlife, and the dependence on the many natural resources available from the St. Francis River and bottomland forest which lay just outside the protective moat and palisade surrounding the residential area.

Museum Scavenger Hunt

(Sample question: "Looking at the Casqui mural, list two reasons why the village was built on the bank of the St.

203

Francis river?") This is always the favorite question and a morale booster for students who don't enjoy or have difficulty reading. Questions regarding the mural challenge participants to use their imagination. Other questions on the quiz have been changed to highlight other illustrations as well as artifacts in the museum. Students now often list this exhibit explorer exercise as one of their favorite activities.

A/V Presentations

Close-up detail slides of portions of the mural have provided much needed illustrations for several existing talk/slide shows on topics ranging from "Gender Roles in Mississippian Culture," to "Native American Agriculture," "Hunting and Fishing," as well as the inspiration for new slide shows such as a children's orientation A/V show called "One Day at Casqui," which consists primarily of mural close-ups showing everything from games, goofing off, chores, naptime, and teenage lust.

Fund Raising

Much of the funds needed to pay for the Casqui mural were raised by placing a discreet plaque next to the mural listing the names of major contributors. The mural has since contributed to other fund-raising efforts by providing an enticing cover illustration for a fund-raising cookbook published by the Parkin Archeological Support Team.

Publicity

One close-up shot of the Caqui mural was featured on the 1995 Arkansas Archeology Week poster, inspiring the theme for 1995—"Picture The Past." Close-ups of other mural details will be used for other promotional items in the future.

Art Activities and Contests

With the mural as inspiration, students of varying ages have been challenged to create their own vision of what Casqui and other archeological sites once looked like. Future plans include creative writing programs where students will be asked to choose a character in the mural and write a first person story on who the character is and what they are doing.

Guest Lectures

The advantage of using a regional artist is that they are available for personal appearances. Whitsell has given talks on the research and inspiration that went into the mural, including the participation of the interpreter, archeologist, and exhibit specialist in the mural's development. Future programs are planned to feature other artists who have worked with archeological sites to picture the past and to explore the role that art plays in archeological research and interpretation.

Mission-Related Resell Items

When the mural was commissioned, Arkansas State Parks purchased full rights to the mural as well as the artist's working papers, including the right to reproduce the artwork as postcards, posters, T-shirts, book illustrations, slides, and video presentations which have been or may be produced for resale.

A Picture Is Worth a Thousand Words, But Is It Worth Thousands of Dollars?

Absolutely! And that fee may not be as difficult to raise as you think. By working with regional art councils, grant sources, and individual donors, custom artwork should be within any site's range. However, let's say you don't have the money or the fundraising resources to commission a painting for your specific site. Or maybe you just don't have any available wall space for a permanent display. Art-based programming is still a viable option. Our success with the Casqui Mural has inspired us to incorporate prints, posters, traveling art exhibits, and art slides from other museums and archeological sites into our programming. Prices for these vary from free to $150 dollars.

The Five-Dollar Art Exhibit

One of my most useful artworks is a $5 exhibition poster promoting the: "Robes of Splendor" exhibit at the Arkansas Territorial Restoration last year. This exhibit featured two painted buffalo robes believed to have been created by the Quapaws and given to the King of France three hundred years ago. For programs on Arkansas Native American history and Native American art, the poster provides an excellent example of an artform which young visitors have thoroughly enjoyed exploring.

The "Three Villages Robe" featured on the poster can be seen as a map, a picture story, or an historical record. After a briefing on the robe, its history and possible interpretations, we challenge boy scouts and girl scouts earning our park scout patch to create their own buffalo robe simply by drawing the outline of a robe on an art tablet and having them illustrate it with their own map, picture story, or historical record. Their creations remain at the park and our collection of contemporary "buffalo robes" displayed alongside the potser has become an exhibit in itself, one that drew praise from Quapaw Chairperson Grace Goodeagle when she visited Parkin last year to provide a Native American perspective on archeological parks.

Finding Free/Cheap Art to Exploit

Having visited separately several other archeological parks as we were planning our own exhibits, members of the Parkin exhibit committee had seen the effectiveness of artworks commissioned for sites such as Cahokia Mounds in Collinsville, Illinois. Posters and slides of these sites were available in the museum gift shops and have been wonderful assets for our portable programs on prehistoric mound sites and programs exploring the vast Mississippian culture outside of the Parkin site. Archeology Week posters published by archeological societies in several states have also proven to be very valuable free tools for discovery boxes and as classroom materials loaned to schools and libraries. Scavenge your sister parks, museums, agencies, and nonprofit organizations and you are also apt to find free to cheap prints and posters available. Several of the Archeology Week posters have wonderful activity suggestions and additional resources printed right on the back. Displaying posters and prints requires no special permission, but reproducing them may violate copyright laws. Be sure to get written permission if you want to photograph or reproduce an artwork.

The Arkansas Game and Fish Commission, Arkansas Forestry Commission, and the U.S. Forest Service have proven invaluable in providing me with free fauna and flora posters which I use for programs on ethnobotany and zooarcheology. Explore these posters for use beyond wall decorations for your discovery/nature room. For example, free bird posters can be laminated, the birds cut out and placed in appropriate habitats along your nature trail for a birdwalk with guaranteed results. Take it a step further and add a recording of bird vocalizations synchronized with the order of the birds' "appearances."

Art to Go

You can vary your programming throughout the year with traveling art exhibits. For example, the Arkansas State University Museum has a set of George Catlin prints which it loans out for one-month periods for $150 exhibit fee. These prints serve as an idea background for programs on Native American customs regarding clothing, dances, and games and the artists contribution to anthropological studies. We can't afford to purchase our own set of prints but borrowing the ASU exhibit every couple of years gives us a wonderful opportunity to vary both our exhibits and programming. Two other Arkansas State Parks, Old Washington and the Oil and Brine Museum, have both successfully utilized free exhibits of original art done by regional artists which reflect the history and evolution of their communities. In the future, Parkin hopes to follow their example and host exhibits of contemporary Native American artists.

Commissioning Your Own Artwork

If you have decided a commissioned work is what you need, the next step is to find an artist. If your agency does not have a relationship with a suitable artist, consult your regional art councils, galleries, and schools for suggestions then review portfolios or, better yet, visit sites where the artist has completed commissions in the past. Arkansas State Parks exhibit specialist, Dorothy Meeks, already had experience working with Becky Whitsell and knew that the artist was one who could work with our exhibit committee consisting of Meeks, the station archeologist, Dr. Jeffrey Mitchem of the Arkansas Archeological Survey, and myself.

Our initial exhibit budget was already spent or spoken for, but Park Superintendent Grady Spann was willing to commit to raising $10,000 in donations for the mural through our newly formed friends group, the Parkin Archeological Support Team. Again by surveying parks and museums in your area, you should get a ballpark figure of what your project should cost. The commission contract should specify size, media used, completion date, full rights to the art work, including reproduction and resell rights. Final mural or painting design should be subject to approval of a preliminary color sketch....

The Casqui Mural was painted on canvas rather than directly on the wall to allow for future exhibit renovations and expansions. The canvas was stretched and framed by Fred McCuistion, the exhibit shop's carpenter. Consisting of four separate panels, including a curved section designed to fill the southeast corner of the exhibit hall. It was setup initially in the artist's Little Rock studio and would later be disassembled to be moved to the park visitor center and then reassembled in its permanent display space. If your park/museum is in a rural area, a similar arrangement may be called for to avoid the additional costs of living expenses while the artist works on site.

All the details were resolved easily except one—what did we want to say with our big picture? The archeologist was concerned that it be accurate in reflecting what we have learned through our archeological research. With our excavations really just beginning, there are many things about the village itself we do not know although we have learned a great deal about the villager's utilization of the flora, fauna and aquatic resources. The exhibit specialist was concerned that it be colorful, eye-catching, a vivid contrast to the artifacts displayed. I wanted the mural to tell stories—many stories, not just one, so that we could maximize its role in the interpretation of the park and fulfill Tilden's first principle by visually establishing a rapport between the long departed villagers and our park visitors—i.e., ghosts on demand.

We all agreed that the emphasis would be on the people of Casqui in relation to their environment. The next step was to decide on the visual perspective. The scope of the painting needed to be broad enough to reflect the natural and manmade landscape. It needed to show enough detail for visitors to be able to identify individuals and their tasks, without becoming bogged down in details which would require extensive research on both our part and the artist's.

We were on a very tight deadline with less than six months between the initiation of the contract with the artist and the dedication of the Visitor Center and exhibits.

Conferences were held on site and at the artist's studio. A bird's eye view was the general instruction given. This produced an initial sketch which was far too broad. The people looked like ants. So much for Tilden's first. The second sketch was too close up, providing an excellent focus on individual villagers but without showing their connection to this particular environment. That's when we came up with the bird-in-a-tree's eye view. This perspective provided a broad enough scope without eliminating the details needed to establish an emotional connection with viewers.

The artist provided some of the most important ingredients on her own initiative. The boy gliding down the mud slide on the river bank is the superintendent's son. The teenage girl neglecting her reed-gathering as she flirts with a young man is the artist's daughter. The black dog with the white patch on its chest following the returning hunters is the archeologists' pet, BoBo. The redtail hawk and great blue heron were included as totems in my honor. Visitor's love these insider's tidbits and are often prompted to choose their own representative in the Casqui mural.

An Interpretive Masterpiece

Is it art? Is it good art? Those are questions for art museums, galleries, and collectors. Whether you're evaluating a $5 poster, a $100 print, or a $10,000 commissioned mural, "Is it Interpretation?" is the question for us. If it challenges the visitor to see your topic in a new light, to look deeper, to ask more questions, to feel a personal connection, then the answer is an emphatic "YES!" There is no question in my mind that the Casqui mural at Parkin Archeological State Park is an interpretive masterpiece and an investment which will continue to appreciate in interpretive value as our programming and visitation continue to grow.

PUPPETATION

Travis White, Park Ranger
Cuyahoga Valley National Recreation Area
15610 Vaughn Road
Brecksville, OH 44141

ABSTRACT: *Puppets are nothing new. Nevertheless they have universal appeal that can help you convey a message, attract an audience where you couldn't before or just add that special "sparkle" we often need in our programming. This presentation will address tried and true techniques, lowcost, high-yield puppetry and some creative "new" techniques you can try to help you get started in puppetry, revitalize your existing puppet programs, and help you avoid pitfalls.*

KEYWORDS: *Unique, high-yield, creative, appealing.*

Puppets *Again?*

Okay, so puppets aren't some new clever way of getting your messages out. They still have universal appeal no matter where you go. So why not draw on this appeal to add luster and zip to your interpretive programming? What's great about puppets is you can use them in a thousand different ways, and you can start cheap if your budget is tight. (Whose isn't, right?) In this presentation, I hope to give you information and resources that you can immediately put to use. Whether you have never tried puppets and want to, or find your existing puppet programs are getting stale, this presentation is for you.

Pros

Puppets are great. The fact that you are offering a program with them will often guarantee you an audience. Of course you will have to do a good job if you want your audience to return. Although you can use puppets for all age groups, children relate the best to them. In today's society of video games, Power Rangers, and MTV, keeping the attention of kids can often be a challenge. I have used puppets for the general public too, with great success. Puppets can also help you better explain sensitive issues that a staff person reciting the information may have trouble getting across (i.e., not feeding wildlife, not picking wildflowers, not cutting switchbacks). Puppets can also help you add zest to old but still important subjects like recycling and pollution. Puppets can also be used in short vignettes. You don't have to put on a huge production.

Cons

Although many puppets take very little skill (most hand puppets); when, and if, you decide to move up to muppet style, rod-arm puppets, you will need to invest some time to become proficient. With muppet style puppets, cost may also become a factor. Whereas a simple hand puppet can be purchased (or made) for as little as $5, Muppet style puppets can cost over $100. However, careful shopping can help you avoid high-cost puppets. You can also make your own to save money. Another drawback is when you need two or three people to put on a puppet production. If staffing is tight this might be a problem, but the benefits are often worth it. Don't forget the possibility of using volunteers!

Types of Puppets

There are many different types of puppets. The following will help you understand the most popular puppets used today.

- **Finger puppets.** These can be made or purchased and are excellent icebreakers and good for informal interpretation. I often use them to help draw out shy children. When they won't talk to the ranger, they often will talk to the "puppet."

- **Hand puppets.** These are great because they are inexpensive and can be thrown in your knapsack for roving interpretation, off-site programs, and puppet productions. There are many animal styles available. (See sources). They are probably the easiest to manipulate, and their mouths usually don't move.

- **Muppet style/big mouth puppets.** These are available in both rod-arm and human-arm styles. Rod-arm puppets use skinny black rods that the puppeteer down below manipulates which moves the puppet's arms. They take some practice before you can get pretty good. What will bother you at first is using many arm and had muscles that you normally don't use. Just stick with it! Perseverance pays off, and those muscles will soon get strong! Human-arm puppets use the puppeteer's arm or a second puppeteer's arms. This is done with special "second sleeve" shirts and dresses. The puppeteer wears gloves and with human-arm puppets you can pick up things and use your fingers.

Blacklight puppets. Blacklight puppets are great if you really want to wow your audiences. There is some cost to getting started, but the effect is amazing. Fluorescent paint and fabrics must be used along with the blacklights themselves. I highly encourage you to see a blacklight production somewhere.

Carpetfoam puppets. These have been around awhile but you may not be familiar with the different forms they can take. They can be conventional style puppets or "giant" puppets for spectacular results. You can also make great specialty puppets like stars, suns, and clouds. You may want to make something simple like a bird's nest, or get fancy and make a full wearable costume. The Minnesota Zoo uses giant carpetform puppets (or costumes) and has plans and a video available for viewing.

Sound

This is important and can make or break your puppet presentation. If your audience cannot hear your puppets, you will quickly lose them. One easy way for good sound is to prerecord your production, or maybe some of it. Professionally done songs work great too (i.e., Mary Miche's Nature Nuts and The Banana Slug Band). Although a fancy sound system is nice, I have used a simple boom box with good results. However, if you are going to do your production live, consider using microphones. If not, at least make sure the front of your theater (if your production is using one) allows sound to travel through it. If you need sound effects, be sure to try your local library first as they often have tapes they can lend you.

Puppet Stages

Although you don't always need one, chances are good if you continue in puppetry you will eventually need a puppet stage. They are available commercially, or you can make your own. Both Puppet Productions and One-Way Street sell stages and One-Way Street sells plans to make one. After using many different kinds I find I prefer a simple PVC plastic pipe style. These put up and take down nicely, travel relatively well, and store easily. Keep your design simple or the people who come after you won't appreciate all your fancy work! Curtains can be made from the extremely fancy velour or crushed velvet all the way to simple dyed sheets. I've even used old blankets in a pinch. Inexpensive black fabric from a fabric store is my preference. (Be sure however you can't see through it.)

For stages don't forget to be creative. Don't limit yourself to "normal puppet stages." I've taken simple sheet cardboard and had artistic staff paint scenes on it for me. I then bent each end ninety degrees so it would stand up. With this style you can have animal puppets pop out of underground burrows, knot holes, and even canal boat windows!

Lighting

Although not always needed, you may come to the point where you want auxiliary lighting. Low-cost methods include clamp-on spot lights available at hardware stores or using coffee cans painted black on the outside with clamps attached and hooked up to simple household dimmer switches. The puppet companies of course will sell you a complete system for those of you with unlimited budgets.

Props

Be sure to take advantage of using props. Here again be as creative as possible. You can make things from cardboard, papier-maché, or use the real item on a stick. Remember your items don't necessarily need to be three-dimensional. One dimensional often is all you need. If you are not artistic in this area, find other staff or a volunteer who is. You can also make a transparency of something, project it larger with an overhead machine, and then trace it.

The "Magic" Bag

In recent years I have used what I call my "magic bag" to introduce animal puppets to young children. I have mostly used a large black plastic bag but am changing to a large black cloth bag. The idea is to be talking about something else when the bag suddenly "moves." You can do this with a string or just pretend. You then proceed to "investigate" and after sticking your hand in you get "pulled" inside somewhat while you wrestle with getting the animal out, (a hand puppet). The more you let yourself get "pulled" into the bag the more fun the children seem to have. While you are "wrestling" you are also getting the puppet on your hand. Then come back out and you have the puppet in your arms where it can tell their story as "wild" animals, I never allow the children to pet the puppets, although they want to in the worst way.

Puppets and Puppet Supplies

Here is my opinion of some sources I've used. This is strictly my opinion from dealing with these folks and using their puppets and supplies.

Puppet Productions

Definitely high-quality puppets. Mouths on their muppet style puppets are pretty stiff to work and are hard on beginners. Wait for their sales and you can save from 30 to 55%, but delivery was slow for me (numerous weeks). They put on workshops throughout the country which are helpful. Free catalog upon request.

One-Way Street, Inc.

Very high-quality puppets and supplies. This company really believes in customer service. I have never had to wait more than a few days for anything I've ordered. They also put on workshops throughout the country so ask when and where their next one is. Their workshops are *excellent!* Free catalog upon request.

Folk Manis, Inc.

Makers of fine hand puppets of most small mammals (and some big) as well as many insects and "unusual" puppets (like a hatching Protoceratops!) They also have finger puppets. These are great starter puppets. Folk Manis has a special price if the puppets will be used in your "institution for education or therapy." You will save about 50%, but the minimum order is $200. Catalog upon request and special discount order form if you qualify.

Other Sources

Be sure to try any local sources you may have. See if there is a local "puppet club" near you. Be sure to check with your local library as they sometimes have puppets to loan. They also may know of local sources.

Conclusion

The sky is the limit with puppets. Let your imagination run wild and your results will be both spectacular and gratifying. Pretend you're a kid again and think what would wow and thrill you and then try it! And be sure to try them on adults because they are nothing more than kids with old skin on!

Sources

Puppet and puppet supplies

Puppet Productions
P.O. Box 1066
Desoto, TX 75123-1066
1-800-854-2151

One-Way Street
P.O. Box 2398
Littleton, CO 80161
1-800-569-4537

Folk Manis, Inc.
1219 Park Ave.
Emeryville, CA 94608
(510)658-7677

Minnesota Zoo
13000 Zoo Blvd.
Apple Valley, MN 55124

Prerecorded tapes

"Nature Nuts"
"Earthy Tunes"
These tapes have good environmental themes. Mary has other tapes available.
Mary Miche
P.O. Box 11545
Berkeley, CA 94701-2545

"Dirt Ate My Lunch"
Banana Slug Band
Music for Little People
P.O. Box 1460
Redway, CA 95560
1-800-346-4445

Additional Resources

VonSeggen, Liz and Dale. *Reaching and Teaching with Puppets.* Video. Littleton, CO: One-Way Street, Inc.

Hawes, Bill. 1992. *The Puppet Book,* revised ed. Desoto, TX: Puppet Productions.

STORYLAB I—AN INTRODUCTION TO STORYTELLLING

Linda Yemoto, Naturalist
East Bay Regional Park District
Tilden Nature Area
Berkeley, CA 94708

ABSTRACT: *Storytelling is an ancient art that can be used effectively by any modern day interpreter. This article covers exercises, techniques, and resources that are helpful in developing skills as a storyteller.*

KEYWORDS: *Storytelling, techniques, resources.*

Introduction

Storytelling is a special magic. It can transport you to a world of giants and elves or to a far distant planet or to a time when animals spoke. Storytelling can touch the imagination and innocence in all of us.

As a storyteller, your goal is to become, for a brief moment, something more than a man or woman standing in front of the room—your goal is to create a whole new world using words, sounds, gestures, and expressions. To hear a story is an ancient longing, to tell a story an ancient skill. To help you learn this ancient skill, you will take part in several exercises and try out techniques that can help you become the embodiment of your story.

Relaxation Exercises

Begin by relaxing your body. Either standing or sitting, take a slow, deep breath, hold it briefly and release it slowly. Repeat two or three times. Let your head drop down to your chest, pretend it's a weight hanging from your neck. Roll it up slowly toward one shoulder and let it fall back down to your chest. Roll it again a little closer to your shoulder and let it fall back to your chest again. Each time you get a little closer to your shoulder before letting your head fall again to your chest. About the fourth time it has enough momentum to get over your shoulder and fall to your back. Now slowly roll your head from your back toward the other shoulder. Again it will take two or three times to give your head the momentum needed to roll over your shoulder to fall to your chest. Now let your head roll over one shoulder, fall to the back, roll over the other shoulder, and fall to your chest. Repeat two or three times, then change directions.

Nod your head emphatically "yes" and then "no"; repeat once or twice. Now write your name in the air, using your head as the pen or pencil.

Standing with your legs shoulder-width apart, bend forward from the waist and let your upper body hang down with your arms falling toward the ground. As you did with your head, pretend your arms are a weight hanging from your waist; gently swing your arms from side to side. Now use your upper body to swing your arms more vigorously from side to side, shifting your weight slightly from foot to foot as you do so. When your arms have enough momentum, they should cause you to stand up as they swing all the way up and over your head. Do these circles two or three times then start again, but form your circles in the other direction. We will add our voices to this exercise, letting it come out as we swing through these circles.

Humming Exercises

Before telling a story, conducting a walk, or speaking to a group, it's a good idea to warm up your voice. Humming is an effective warm-up because you can't strain your voice while doing it. Hum on your way to work, hum along with the radio, you can even hum your story. Change the volume, pitch, and expression of your hum. Hum as if your voice were a race car on a race track.

Parts of Your Voice

It's important and fun to realize that you can control how your voice sounds by projecting it from different parts of your face or body. Make a nasal EEEEEEEEE sound and it will be coming from the front of your head or through your nose. Make a long AAAAAAA sound and it comes from the front of your mouth; an AHHHHHH sound from the back of your throat; and OHHHH sound from your chest; and a deep UUUUUU sound from way down in your stomach. We will be doing some exercises that teach you to "move" your voice around.

Inflection and Emphasis

Each of us can probably remember a professor or teacher who would nearly put us to sleep with their lectures. It's likely that they used little or no inflection when they spoke. If you drop your voice at the end of every sentence, your listeners think you are done, and they stop listening. You can use inflection to keep your audience interested, keep them listening. As an exercise, count to ten but stop at seven (sustain your voice as if you were going to continue counting). Recite a simple rhyme like "Mary had a Little Lamb" using inflection at the end of each phrase, dropping your voice only at the end of each sentence. To illustrate how emphasis can completely change the feeling of a sentence, we will recite "I'll have her dog destroyed," several times, each time emphasizing a different word.

Facial Expression
Practice expressing different emotions, feelings, or attitudes using only your face. We'll go through different exercises and games first using only our faces, then adding body movements to express anger, joy, surprise, sadness, etc.

Character Development
There are times in telling a story that you want to become one or more of the characters in your story. You may want to tell the story in first-person, as that character; or your character may be the narrator. Here is an easy exercise to do that helps you to become one of the characters. First, use the relaxation techniques you learned at the beginning. Then think about the character (whether it's a person, animal, spirit, etc). What is the character's age; does it have siblings, if so what are their names and ages; where do they live; what is the color of their eyes, hair. Think about anything that might give you insight into the character. Visualize the character in your mind; picture it moving about — how does it move; what is it wearing (clothing, feathers, fur?). Now stand up and move about, still visualizing that character. Pretend to slowly step into that character; become that character. Feel the body or form of the character; feel the clothing (or feathers, fur, etc.). Do they feel light and airy or heavy and confining? Is your fur ratty and flea-bitten or thick and shiny? Do you have anything on your head? Are you carrying anything? What do you smell like? What are you thinking? Set up a scenario for your character: As you're moving about you suddenly realize you've lost something, something very important to you. You look all around, rush back to an earlier spot and look some more; you begin to get frantic almost panicked; you search and search until...ahh, you've found it. Now you're relieved; but feeling very tired, you look around for a good place to rest. You lay down and fall asleep.

Eventually you will feel so totally immersed in the details of your character that you could "drown yourself in a sea of specificity." It is said that you should be so comfortable with the character that you could walk down the street or go to the grocery store as that character.

Finding or Creating Your Story
Stories are everywhere, but finding the right one for you to tell can be a challenge. Some tellers say that their stories simply "come to them—like you meet someone who becomes a friend." Others dream their stories, still others spend hours at the library going through stories one by one, looking for the one that appeals to them. However you find your story, the choice is always a personal one. As Jimmy Neil Smith says in *Homespun*, "Finding a story to tell happens in the heart, not the mind." And no matter how the story comes to you, you must love the story and *believe* the story.

Donald Davis collects, creates, and tell stories of growing up in Haywood County, North Carolina. As he writes in *Homespun*, "When I'm collecting and creating my stories, I don't try to remember the things that happened in my life. Instead, I first try to mentally re-create the place, to return to it, walk around in it, feel it, smell it, describe it in my mind in the minutest detail. As I wander around in that place, I think about the people who are there with me, and soon, I begin to remember what happened. But I don't see stories. Instead, I see fragments of stories. From a fragment, a story will grow."

Jay O'Callahan, also in *Homespun*, explains, "For me, story creation—whether it's an imaginary story or a true-life event—begins with an object, a strawberry or the scribblings in my grandmother's house. Any object can give birth to a story. ...If we can find that object that releases our story, that story will talk in the language of imagery, not the language of logic. It will carry more truth, more deeply, and help us to see the truth in a way that we've never dared to see it before."

Learning and Shaping Your Story
Storytelling is a personal art. There are as many ways of telling a story as there are tellers; and you must find your own individual style of storytelling. There are also as many ways of learning a story as there are tellers. Some tellers suggest that if the story is in print form you read it again and again and again, think about it, live with it. Connie Reagan-Blake explains that she usually reads the story just before she goes to bed—to put it in her dreamworld, because that's where all stories begin. "If I put it back into the dreamworld, I'm much more inside the story, and soon, the story becomes mine."

Others like Elizabeth Ellis, "create a set of very vivid mind pictures, trying to see them as clearly as possible, allowing the story to come into my heart. When I tell the story, I describe each picture, each frame. The more vividly I can visualize the story, experience being within the tale, the more vividly I can recount that experience to my listeners."

Component parts of a story. Still others outline the story and study it. One way of doing this is to break the story down into its five component parts:

1. Setting the scene—the beginning and the background of the story.

2. Development—the story unfolds, it pulls the audience in and builds tension to #3.

3. Crisis—the height of tension.

4. Solution—the relief of that tension.

5. Moral or wrap-up—conclusion of the story.

Gibberish. In learning a story, words oddly enough, sometimes get in the way. Sometimes you *must* tell a story word-for-word as it is written. But even then, you don't memorize the story, you "learn it by heart." If you're trying to tell the story in your own words, using gibberish can help. I suggest you first visualize the story in your mind's eye—the scene, the characters, all the action, etc. Then, tell the story using gibberish—nothing but nonsense words and syllables. If you are able to identify the different components of the story through changes in your voice, facial expressions, gestures; you will no doubt be able to tell the story effectively with real words. You will be sharing the feeling and mind pictures that you have of the story, not merely repeating words that you had read.

Voices and Accents

In creating voices for the various characters in a story, stay within the ranges of your natural voice. Speaking in the extremes of your range both strains your vocal cords and makes the audience uncomfortable. Instead, using the exercises you learned in "Parts of your Voice," create different characters by projecting your voice through your nose, from the back of your throat, etc.

If you are tempted to use a regional or cultural accent in your story, a simple rule of thumb is be comfortable enough in your ability to use that accent so that if someone from that region or culture is sitting in your audience they are accepting of your accent. If you are not at that level of comfort, try using some key phrasings or colloquialisms that get across the feeling you're looking for.

Gestures

Gesturing can make the images in a story more intense; it can also completely overwhelm a story. Suggestions for using gestures are to make them natural, succinct, and as simple as possible. Make sure that every gesture is useful to the story and its telling.

Changing the Story

Storytelling, by its very nature, is improvisational. The more you tell your story, the more you will mold and shape it to fit your telling and your audience. Sometimes stories cannot be told unless they are modified (words and their meanings change over the years). Sometimes they must be changed to be relevant to today. However, in changing stories, you must use extreme care. Stories must not be changed arbitrarily; you must maintain the intrinsic value of the story. Most storytellers agree that some tales must never be changed — sacred or ritual stories (out of respect for the culture) and literary tales (out of respect for the author).

Practicing and Polishing

Once you've learned and told your story, only repeated tellings will let you polish your story. It's the same as the answer to the question, "How do you get to Carnegie Hall?—Practice, practice, practice!" Tell your story to a mirror, a tape recorder, a video recorder, and to anyone who will listen. As Jimmy Neil Smith writes in *Homespun*, "We should search for that powerful point when the teller and the tale become one—when we learn a story so completely that it actually becomes a part of us."

Choosing the Right Story

This concept is so basic to good interpretation, that it seems silly to mention. We certainly don't interpret a subject in the same manner to preschoolers as we do to adults. The same is true with storytelling.

Storytelling Etiquette

It's not nice to "steal" another storytellers material—i.e., use it without permission. If you use another teller's story, give them credit as your source when you tell the tale, "I first heard this story from..." or "The original version comes from _________ by _______________." As David Holt writes in *Ready to Tell Tales*, " We make it a point to tell audiences about other storytellers and give them credit for their efforts. ...In this way we lift each other up, one story at a time."

Resources

National Storytelling Association, P.O. Box 309, Jonesborough, TN 37659. Since 1973 presents National Storytelling Festival, first full weekend in October; National Storytelling Conference each summer; Tellebration each November; publishes *National Storytelling Directory* and many other resources; call 1-800-525-4514 for catalog.

Selected References

Bauer, Caroline. 1977. *Handbook for Storytellers.* ALA Publishers.

Brown, Jeff. 1995. *We Like Kids, a Multicultural Storybook.* Goodyear Books.

Caduto, M., and J. Bruchac. *Keepers of the Animals, Native American Stories & Wildlife Activities.* Fulcrum, Inc.

———. 1988. *Keepers of the Earth and Keepers of the Night.* Fulcrum, Inc.

DeSpain, Pleasant. 1993. *Thirty-three Multi-cultural Stories to Tell.* August House Publishers.

Harrington, Annette. 1992. *Easy to Tell Stories for Young Children.* National Storytelling Press.

Holt, David, and Bill Mooney. 1994. *Ready to Tell Tales, Sure-fire Stories.* August House Publishers.

Houlding, Gail and Shaw. 1996. *Day of the Moon Shadow, Tales with Ancient Answers to Scientific Questions.*

Kallevig, Christine Petrell. 1991. *Folding Stories: Storytelling and Origami Together as One.* Storytime Ink.

Kronberg, Ruthilde, and Patricia McKissack. 1990. *A Piece of the Wind, and Other Stories to Tell.* Harper & Row.

Margolin, Malcolm. 1981. *The Way We Lived, Indian Reminiscences, Stories and Songs.* Heyday Books.

National Storytelling Press. 1995. *Many Voices, True Tales of American's Past.* National Storytelling Press.

Rosen, Michael, ed. 1992. *South and North, East and West.* Candlewick Press.

Schimmel, Nancy. 1978. *Just Enough to Make a Story, a Sourcebook for Storytelling.* Sisters Choice Publishers.

Smith, Jimmy Neil. 1988. *Homespun, Tales from America's Favorite Storytellers.* Crown Publishers.

Stangle, Jean. 1984 and 1989. *Paper Stories and Is Your Storytale Dragging?* Fearon Teacher Aids.

Strauss, Susan. 1996. *The Passionate Fact, Storytelling in Natural History & Cultural Interpretation.*

Yolen, Jane. 1986. *Favorite Folktales from Around the World.* Pantheon Books.

THEATER-IN-THE-PARK VS. VIRTUAL REALITY

Pat Gorman
Park Ranger
Independence National Historical Park
313 Walnut Street
Philadelphia, PA 19106

***ABSTRACT**: What is virtual reality? How does it affect the visitors of our national parks? What can we offer as an alternative? Should we try to compete with this technology or can we use it to our advantage? Can theater-in-the-park be the answer?*

***KEYWORDS:** Humor, participation, imagination.*

What Is Virtual Reality?

The experts in this field can give as many definitions as there are new forms of virtual reality invented each day. But, they all seem to agree on one principle: virtual reality is a form of communication. It attempts to simulate reality by manipulating the human perceptual system. Today's scientist can create an alternate reality by controlling the human senses of sight, hearing, touch, smell, and taste, and by directing human emotions.

There are many levels and complexity of technology that can be encompassed by this explanation. For the purpose of this debate, I have narrowed the field to the three arenas we are most likely to encounter the results of in our line of work. They are: special venue theaters (Imax or Omni films), communication applications (on-line services), and location-based attractions (Disney World, Epcot, MCA/Universal Tours).

Special venue theaters use large 360-degree screens, high resolution film, and fast frame rates to envelop and surround their viewers within the action. Examples of these films can be seen at the Franklin Institute Science Museum's Tuttleman Omniverse Theater in Philadelphia, Pennsylvania, and at the Imax Theater in Tusayan, Arizona, just outside of Grand Canyon National Park.

Communication applications evolved out of home video games. This technology, brought into the home for entertainment, also opened the door for informational and educational applications. Today's on-line services already allow us to actually tour exhibits located anywhere in the world.

Location-based attractions are the pinnacle manipulators of the human perceptual system. They combine motion, auditory and visual sensations, physical feelings, taste, smells and robotics, all in order to simulate a sense of presence. This class of entertainment has been found most at fault for creating a false sense of reality in some of our national park visitors.

What Attracts People to Virtual Reality?

It's safe and there's no risk involved. No one ever had a heart attack or sprained an ankle by joining a hike down to the bottom of the Grand Canyon in an Imax theater presentation.

The experience is clean and comfortable. When people want to experience an environment they've never encountered before, they're often attracted to the type of amusement ride that may be found at the Epcot Center. But in a simulated Florida Everglades, the mosquitoes don't bite, you don't get sunburned, your feet don't end up all muddy and wet, and if the heat and humidity is too much for you, you know that in 45 seconds, the ride will be over.

Virtual reality is exciting. It can transport people to different times and places. It presents them with sensations they've never encountered before. It allows people to experience events or activities that for one reason or another, may be beyond their means or beyond their ability to achieve.

What Is Theater-in-the-Park?

Theater-in-the-park is a method of interpretation that utilizes humor, the five senses, emotions, and audience participation in order for visitors to experience spaces far away, places long ago, and experiences beyond their reach.

With this technique, basically, you tell a story while attempting to have your audience members not only become the characters, but to experience the story as well. The interpreter, serving as the narrator, picks volunteers from the audience to become the main characters and utilizes the rest of the audience as participants in the narrative. Then the drama begins. It's up to you as the interpreter to harness all the skills and talents you possess in order to give the best account of your particular story.

Avail yourself of everything you have at your disposal. Employ the five senses and the personal emotions of your audience.

If you're trying to portray a certain time period, dress your characters in period clothing, and use props. If you're trying to relate a particular physical condition, such as damp weather, squirt your characters with a spritz bottle. If you want your volunteers to experience a white-water raft trip, have them wear life jackets and seat them in a device where you can safely rock, roll, and bounce them about. If you're trying to make ancient people, well-known individuals or civilizations long gone, turn your volunteers into these people. Give them physical appearances, family backgrounds, feelings, and emotions. Give a face to the name, something your audience can relate to.

As in any good literary or theatrical work, your presentation should follow the basic structural elements of drama. Your production should start with an introduction of characters and of conflicts or predicaments, building to a climax and concluding in a state of resolution or perseverance. If these elements are satisfied, you will have effectively encompassed the principles of interpretation as well.

Take theater-in-the-park as far as your imagination, physical limitations, and administrative restraints will allow you to go. Good taste is your only limit.

How Can Theater-in-the-Park Be Used Elsewhere?

With cultural resources: many cultural sites today consist of very little of the original buildings or objects associated with the events they commemorate. Some sites are in such a state of deterioration that without prior knowledge of the area, the average person has a hard time distinguishing what is before them. Use theater-in-the-park to help your visitors recognize objects that are no longer there. Have them reenact events of the past, enabling them to envision situations and circumstances that are completely alien to them. If your site celebrates cultural heritage, find a way to associate this legacy to something in the lives of your visitors. Have them adopt the memories you wish to preserve. Once they are able to do this, they will end up with a greater appreciation and new pride for a culture different from their own.

With natural resources: in our national parks, visitors often cannot imagine what an area may have looked like before geological events gave these locations their present day appearance. Both adults and children have a hard time comprehending the magnitude of such events, how geographical circumstances can be so very different than they are today and the basic premise of ecosystems. Theater-in-the-park can be used to demonstrate the sequence and physical science of these events. Have your visitors create miniature geological events of their own. If your audience is predominately children, you may want them to become the members of an ecosystem. In doing so, they will learn how they all need each other to survive. If you're facing a public new to and inexperienced with nature, take advantage of this opportunity to familiarize them with what lies ahead. Use your audience members to demonstrate the proper manner in which to behave in the wild. Have them display the proper procedures to follow in particular circumstances.

Suppose you want to accustom your visitors to physical conditions they may soon encounter. Pick a willing volunteer from your audience and provide that person with a feeling of what's to come. Whether it's hot or cold temperatures, snow, rain, sun, heavy backpacks or steep terrain, as long as your volunteer has a good sense of humor and you can accomplish this simulation in a safe manner, you can bet it will be a spectacle your audience won't soon forget.

With themes of a serious nature: can and should theater-in-the-park be used in the interpretation of solemn or controversial topics? Yes, but with much discretion. When interpreting tragic events such as wars and human holocaust, recent or past, use theater-in-the-park to convey the enormity and horror of these hostilities. Use your audience members as representatives of the great human loss resulting from such catastrophes. Show them the lessons learned. If you're interpreting issues of a controversial nature, place your audience in the positions of opposing points of view and engage them in a lively, but civilized, debate. Perhaps you might have them assume opinions contrary to their own personal beliefs, as an experiment during the discourse. This might just leave your visitors with a more open mind for the convictions of others.

When using theater-in-the-park for the interpretation of controversial or tragic episodes in history, integrity, respect, and sensitivity should be your guide. Thoroughly research the topic you are to present so that you can accurately and fairly depict all points of view. Use firsthand accounts of survivors for a more poignant effect. You can steer your audience toward a particular assessment of the circumstances, but for a better result, allow them to draw their own conclusions.

The Challenge

How does theater-in-the-park compare to virtual reality? In what way does either doctrine affect our work in the field of interpretation? What are the positive and negative aspects of each? Let's compare the two:

Virtual reality is a fascinating technology that offers people a safe and comfortable opportunity to experience spaces far away and places long ago. It might offer the only means for people with physical or mental debilities to participate in activities otherwise limited or denied them. On the negative side, it's not real. Virtual reality has the ability to cause people to lose touch with reality. The technology is so captivating that it distracts people from encountering genuine life experiences. In extreme instances, it can leave people with a false sense of reality, whereby they believe the real world to be as safe and accessible as the world of virtual reality.

Theater-in-the-park provides people with a safe and comfortable way to participate in an event or experience a place, rather than just read or hear about it. This methodology works particularly well with children because it presents them with a hands-on activity, capturing their attention for a longer period of time. If rendered in tune with the audience, theater-in-the-park can tap into the imagination of the public, stimulating their creative thinking process, releasing their sense of wonder and curiosity, whereby you've captured and retained your visitor's interest long after the performance is over. On the negative side; it's not virtual reality. This concept has its limits. Though it can simulate some of the same sensations as virtual reality, the results won't be as high a degree or as spectacular as those encountered in this expanding technology. Theater-in-the-park is subject to many variables, the mood of your audience, the imagination of the narrator and visitors, physical barriers, time, etc. Ultimately, this is not the medium for every interpreter. Some people may feel uncomfortable with the unpredictability and level of participation required of the host of theater-in-the-park.

Conclusion

To conclude, virtual reality is here, it is and will continue to be an influencing force in the field of interpretation. However, we don't need to look upon it as our enemy. We can use this technology to our advantage. Are not many national parks already "on-line?" Wouldn't you prefer the novice outdoorsman preview nature from a special venue theater or location based attraction rather than have to rescue them from the actual environment once they've overestimated their untested abilities? Theater-in-the-park can accomplish some of the same goals. The advantage is that this concept allows us to draw the public to our national parks. It then gives us a safe and comfortable way to introduce and present our visitors to the majesty of reality. It is up to us as interpreters to clarify the misconceptions virtual reality might have placed in the minds of our communities.

If we can tap into the human imagination, it just might be the answer to the technology of virtual reality that has dazzled, yet numbed the public to the awesome grandeur of the real thing. After all, it was the human imagination that envisioned virtual reality in the first place.

Additional References

Biocca, Frank, and Mark R. Levy. 1995. *Communication in the Age of Virtual Reality.* Hillsdale, NJ: Lawrence Erlbaum Associates, Inc., Publishers.

Heim, Michael. 1993. *The Metaphysics of Virtual Reality.* New York, NY: Oxford University Press, Inc.

Hull, Raymond. 1983. *How to Write a Play.* Cincinnati, OH: Writer's Digest Books, F&W Publications, Inc.

Lawson, John Howard. 1936. *Theory and Technique of Playwriting.* New York, NY: G.P. Putnam's Sons.

Rheingold, Howard. 1991. *Virtual Reality.* New York, NY: Summit Books.

WRITING FOR THE LOCAL MARKET

Sharol Nelson-Embry, Supervising Naturalist
East Bay Regional Park District, Crab Cove Visitor Center
1252 McKay Avenue
Alameda, CA 94501

***ABSTRACT:** Learn four easy steps to get an article published in your local newspaper, magazine, or newsletter.*

***KEYWORDS:** Writing, publishing, nature writers.*

Introduction
Do you have a burning ambition to see your words in print? If you have the talent and passion for writing, there are editors who are anxiously waiting for your ideas in print! As a naturalist, I've discovered a wonderful venue for my writing through local community newspapers. You can follow these four easy steps to take your idea for an article from the brainstorming stage to "ink on the rag!"

Step 1: Choose Your Subject
Your first step is to choose the subject for your article. Topic ideas seem to fall into two categories: those that come easily and those that you stew about for weeks or months. Since writers are often hit by the notorious disease called "writer's block"—especially as deadlines arrive—I find it helpful to keep an ongoing list of topics for the times I'm at a loss. A list of ideas is especially helpful if you are writing a series of columns: it can help your column flow from one week to the next. Brainstorming—an exercise where you spew ideas without judgment onto the page—is another helpful method for generating ideas as well as fleshing out an article. Whatever your method for choosing a subject, write about your passion. Each article is a reflection of your soul which you shine for the world to view! You will also be spending a great deal of focused time and energy with the subject in research and rewrite after rewrite: it makes the task easier if you choose something close to your heart. It is also helpful to write about something you have personal experience with, so start with your "backyard" and write about your park or facility: interesting plants or animals found there, its history, etc.

Step 2: Write the Article
You may wonder whether this is the real second step: shouldn't you find a place to publish your article first before expending all the effort in writing it? I've actually done it both ways and recommend this for first-time writers: editors usually want a sample of your writing as well as the first couple of articles if you're doing a series. This kills two birds with one stone, so to speak. There are many approaches to producing a finished piece of work: I'll share mine with you.

Brainstorm an outline. Begin by brainstorming and diagramming related pieces of a given subject. You place the topic in a circle in the middle of a blank page. Then branch out with connecting circles with whatever phrases come to mind related to the subject. Any related phrases are then connected with more branching circles. This "mushroom" approach allows you to fill the page with ideas related to the topic, which can then be used to make an outline for your paper. It can also help you to suspend judgment about a particular subheading until you get past the idea stage. Anything and everything can go into the "branching mushroom"; this helps to get around "writer's block."

Research and first draft. At this point, assess what information is available and what you will need to research further. You can also begin writing the first draft, leaving blanks where you need more information. This strategy leaves time to stew over your paper and rewrite it several times. It also helps to avoid procrastination. First drafts are rarely suitable in form or content for final printing; but you often come up with phrases or ideas which are then easily transferred to your next draft.

Format for the final draft. Most newspaper editors prefer a double-spaced copy with your name at the top of each page of your submission. Of course, these are the people who commonly get information for their social columns scribbled on the back of cocktail napkins. Anything you can do to make their jobs easier makes them very grateful and more than willing to print your submission! When you work out your agreement with the editor, be sure to ask about their preferences for your submission: format; hard copy or disk; deadline date and time; possibility for faxing it into them; etc. Most editors are very overworked, so plan to edit your own work for grammar and content.

Step 3: List Potential Publishers
You next need to decide who will print your article. Begin by making a list of potential contacts: local newspapers, magazines, even your park or facility publications. For newspapers or magazines, call and find out the name of the editor for the section best related to your subject. Next, you need to call and set up appointments to meet with the

editors. With your list of subjects or your idea for an article, you can then "sell" your writing at the meeting. They will often ask for a sample of your writing; bring your article and other samples of your written work (published or unpublished) along.

Step 4: A Single Article or a Regular Column?

Deciding the scope of your writing is the next step you need to take. Depending on your time and the breadth of your subject, you might propose a single article, a series of articles, or a regular column. Even the regular column can be delineated into a daily, weekly, biweekly, or occasional feature article. Knowing how much time you have to develop each article will help you to make a realistic plan that you can then include in your proposal to the editor.

Refine What You've Started

So you've now begun the process to get your work in print. You've delineated your subject(s), contacted potential publishers, and actually fleshed out an article or two. The following are some details to consider in planning and following through to seeing your work in print.

Archive your work. Even though you may be starting out with only a few articles, it is helpful to be organized from the beginning of your efforts. The things you will want to save include copies of your article on computer disk, "tear sheets" (which are the actual published article), plus a hard copy of your submitted article.

Collect a few good reference and resource books. Some references that I rely on include the *Writers' Market* (even the old, out-of-date copies have valuable guidelines and leads which a phone call can update; they're a lot cheaper, too!). Other references are writers' magazines and writers' style guides. I also like to keep a small library of writers that inspire me with their words and visions, like John Muir, Malcolm Margolin, and Annie Dillard. I'm sure you have your favorites as well.

Dazzle them with your thorough offerings. Many newspapers appreciate any extras that you can provide. Although this article is about writing, the statement that a picture is worth a thousand words often holds true. Many editors appreciate good photos or illustrations that you or your agency can provide to accompany your article.

Cultivate your talent. Attend writing workshops to expand your ideas and experience. Many are offered through community colleges, natural history associations, or private seminars from writers. You might also consider joining a writing group with regular meetings; they help motivate you and provide feedback and connections within the world of other writers.

Get Going!

So take your inspiration from nature, culture, or history; the world is waiting for the special view you may have to share! Your local community will benefit from your stories that you commit to paper while you or your agency benefits from the new advocates you can enlighten with your words. Most of all, have fun in the process of exploring a new outlet for your creativity.

Professionalism in Interpretation

Now I see the secret of the making of the best persons. It is to grow in the open air, and to eat and sleep with the earth.

—*Walt Whitman*

AMERICAN BATTLEFIELDS: COMPELLING STORIES AND INTERPRETIVE CHALLENGE

John Doerner
Little Bighorn Battlefield NM
P.O. Box 39
Crow Agency, MT 59022

Anton Heinlein
Chickamuga and Chattanooga NMP
P.O. Box 2128
Fort Oglethorpe, GA 30726

ABSTRACT: *Interpreters at battlefields and related sites are faced with unique challenges that other interpreters may not face: different cultures fighting each other for values that they believed in, popular stories surrounding specific battles, recent archeological information which has changed traditional viewpoints, an increasing demand for recreational use in battlefields, and visitors wanting to collect souvenirs. Interpreters can take these challenges and use them in a positive manner to make their interpretive programs more "compelling."*

KEYWORDS: *American battlefield, value conflicts, recreation.*

Challenges

Interpreters at today's battlefields face far greater challenges in many ways than did those who fought on them. Many battlefields face an increasing demand for recreational use. The word *park* in the context of National Military Park means to many visitors, a place where they can recreate (picnic, rollerblade, horse riding, etc.). Many battlefields also face a growing threat from metal detecting. Battle related artifacts are highly sought after today. Some sites including Manassas and Little Bighorn Battlefield face constant threats of commercial or urban development.

Interpreters also face other serious challenges. At Little Bighorn Battlefield NM, an interpreter is challenged with presenting an objective program on the Battle of the Little Bighorn to a culturally diverse Euro-American/Native American audience. The controversy was so strong, that the name of the monument was changed from Custer Battlefield NM to Little Bighorn Battlefield NM. A national design competition is also there to construct an Indian Memorial to honor the Lakota, Cheyenne, and Arapaho participation.

An interpreter at the U.S.S. Arizona Memorial is faced with the challenge of interpreting to World War veterans and to Japanese visitors, often during the same program. Interpreters at Civil War parks, like Chickamuga and Chattanooga NMP remain challenged 130 years after the Civil War by visitors with a strong Southern heritage. An interpreter at a battlefield constantly needs to be aware of these, and other controversial issues. By being informed, interpreters can "bring both sides together" in balanced and objective programs. The interpretive themes of the battle should reinforce that each side was fighting and dying for what they thought was right. Both sides fought bravely for the ideals that they believed in, and shaped the course of American history.

Another important concern is decreased staffs, and budgets which force many sites to rely more on non-personal interpretation. Waysides, museum exhibits, automated maps, guide booklets, films, and brochures all replace personal interpretation at many areas. We need to strive toward objectivity, and ensure that this information is geared toward universal audiences.

At Little Bighorn Battlefield NM interpreters utilize exciting new information on weapons, soldier/warrior movements, and other useful data revealed from recent archeological surveys of the battlefield. Interpreters combine the data with the oral and historical records of the warriors and soldiers, to retell the many changing "compelling stories" of the Battle of the Little Bighorn.

Program Preparation

To prepare their interpretive programs, the interpreter must do intensive research to assist them in making their programs more "compelling." The intensive research must be done to prepare the interpreter to answer questions from a universal audience. Many visitors are not well versed in military history, weapons, or tactics. Therefore, an interpreter's program should provide a good overview of the battle or campaign, and its immediate and long-term consequences. The effects of the battle or campaign and how it shaped the course of American history (then and now), is important in order to continue the "healing process" initiated by veterans themselves at countless battle reunions over the ages. The historical significance of those battles and how they relate to the modern era are truly unique interpretive challenges.

EXPERIENCE OF PLACE: AN INTERNSHIP MODEL

Elizabeth F. Hoermann, CPEU Coordinator
Leslie C. Obleschuk, Education Specialist
Lowell National Historical Park
67 Kirk Street
Lowell, MA 01852

***ABSTRACT**: Providing meaningful and effective training opportunities is always a challenge. The internship model described in this paper offers an alternative to traditional training through experiential learning combined with more traditional instruction.*

***KEYWORDS**: Professional development, education.*

Introduction

The development of this internship model combines the education and training goals of the National Park Service and the content and skills defined in the interpretive curriculum with education strategies grounded in educational theory.

National Park Service

Interpretation is at the heart of the National Park Service mission and the agency has a strong tradition of commitment to the training and development of professional interpreters. Guidelines for professional development are included in the servicewide policy document on interpretation known as "NPS 6." Coordinated by Dave Dahlen of the NPS Mather Employee Training and Development Center, development of a new interpretive curriculum began in 1994, in response to servicewide reorganization efforts and to the institution of "ranger careers."

NPS Interpretive Curriculum

The Interpretive Development Program is outcome-based rather than course driven. Park rangers will concentrate on attaining competency in identified areas. The new curriculum identifies 11 essential "competencies" for park rangers to attain as they progress through the GS-5, GS-7, and GS-9 levels. A competency is a collection of skills and abilities which produces an interpretive product. Training opportunities of all types may be used by employees to meet the competency requirements.

One of the competency areas identified for all interpreters in the new interpretive curriculum is the ability to work with organized groups in curriculum-based education programs. Module 270, "Developing and Presenting a Curriculum-based Education Program," distinguishes competency in presenting education programs as essential for all interpreters. Aimed at GS-7 or developmental level interpreters, this module places new emphasis on the development of teaching techniques as interpretive skills. Competency in Module 270 is achieved when the interpreter can develop and present a curriculum-based education program that includes pre- and postvisit activities, is developmentally appropriate for the audience, and engages the learners using a variety of educational methods. The program must also demonstrate a strong connection to the park resources as well as a clear link to the curriculum of the learner. This internship model offers interpreters an alternate means for obtaining the competency.

Internships

Internships have been used for many years on the college level. Internships benefit both the student and the employer. They offer the intern a chance to learn while getting some practical experience in a particular field and help to create a link to the intellectual content learned in classroom settings. In addition, internships can help the intern determine if this is a good direction for career development. Through planning and designing an internship the site has an opportunity to review and assess its own progress. Interns often bring a new perspective and can invigorate a site (Milstein, Bobroff, and Restine 1991). Once the framework was defined an opportunity to pilot-test this model was created.

This internship model was pilot-tested in the spring 1996. An interpreter from Boston National Historical Park did an 8-week detail at the Tsongas Industrial History Center/ Lowell National Historical Park. His comments have reinforced our belief in this type of training when he stated, "I found that the combination of professional workshops and hands-on experience strengthened my abilities and skills in dealing with children. I needed that constant reinforcement of theory and practice."

Internship Site

The selection of the internship site is a key element to its success. The site should not be connected to the intern's place of work. A different setting allows the intern to step outside existing paradigms and view the experience with a fresh viewpoint. This can benefit both the intern as well as the internship site (Gordon and Moles 1994). The site needs to offer the intern active participation in the work of that site and place the intern in a role that gives new experience and enhances career goals. Most of all this site should be a stimulating setting (Milstein, Bobroff, and Restine 1991). The site for this internship, The Tsongas Industrial History Center, meets the criteria.

The Tsongas Industrial History Center is a cooperative educational project of the University of Massachusetts Lowell, College of Education, and the National Park Service at Lowell National Historical Park. The center is created through a multiyear cooperative agreement extending through 2001. This center is a model program and an excellent training center for anyone interested in curriculum-based programming. It is a "full-service" center: it offers extensive programs for students—both on-site and off-site—teacher training, curriculum development opportunities, and research on student learning. In addition to the center, Lowell National Historical Park houses the Cooperative Park Education Unit (CPEU). It is designed to support the education mission of the National Park Service and develop professional career opportunities for bringing NPS rangers and professional educators together. It also is created through a multiyear cooperative agreement with UMASS Lowell.

There are many other aspects of the Tsongas Center that make it an ideal site for this internship model. One is its connection to a university. As stated in the pilot test, "The mix of educators and interpreters brings a different perspective on conducting programs, and the link with the University became a great resource for those of us with little formal training."

A second is its role in development of the concept of "parks as classrooms" programs. The combination of hands-on workshops and tours that utilize the resources of the park and emphasis on being curriculum-based are among its benefits.

A third benefit is the variety of opportunities for staff development within a professional educational atmosphere. Not only does the participant have the opportunity to work with a variety of on- and off-site programs, develop curriculum and materials, and conduct research on specific projects, but also interacts with the professional staff. This staff is a combination of university personnel trained in such areas as teaching instructional strategies and working effectively with teachers and National Park Service interpreters with expertise in curriculum-based programs.

Perhaps the best rationale to offer this training opportunity was most effectively stated at the end of the pilot-test internship. "When I first started with the Park Service, I treated all visitors the same and I couldn't understand why children didn't get it....I now understand that children at different ages must be treated differently. What works at one age may not work at another. Also, each group is unique, so the techniques in teaching methods will help me in different situations. Most importantly, difficult and somewhat abstract ideas can be taught to children and they can have fun while they learn."

The Internship

An internship of 10 to 16 weeks affords the interpreter direct, hands-on, daily experience in developing and presenting curriculum-based education programs to student groups. In addition, through formalized training sessions, one-on-one discussions, observations, reading assignments, and research the participant gains exposure to all content areas identified in Module 270: history and role of NPs education programs including "parks as classrooms"; introduction to learning and development; what is curriculum?; developing basic education programs; working with schools, teachers, and community groups; removing bias from education programs; and an introduction to material development.

The internship includes orientation training lasting approximately 5 to 10 days to introduce the participant to the Tsongas Center, Lowell National Historical Park—its story and resources, workshop leader roles and responsibilities, and to help him/her prepare program presentations. A typical week is structured with 25 hours of teaching and/or observing and 15 hours of project, reading, and learning time. The participant masters at least one off-site program ("Lowell Industrial Learning Experience") and 3 on-site programs ("Yankees and Immigrants"; "Workers on the Line"; "Bale to Bolt"; "Power to Production"; or "Invention Factory"). Each is a combination of a 90-minute hands-on workshop and a 75-minute tour of related park resources. Participants also complete a project that could involve audience research, an outreach module, or adaptation of a Tsongas Center Program. Specific developmental assignments might include: attend Tsongas Center Advisory Board meetings to learn more about how to establish and use teacher advisers; work with the Tsongas Center School liaison or CPEU coordinator to help coordinate a teacher professional development workshop; learn about national and state curriculum frameworks by investigating how these frameworks are incorporated into one of the Tsongas Center programs; shadow a classroom teacher to gain understanding of what his/her day and work environment is like; or observe an education program at another NPS site and identify the learning styles addressed and types of learning activities offered.

Conclusion

Any internship needs to be long enough to allow the participant to develop skills that he/she can then practice at his/her own work site. The training component of the internship needs to be tailored to the participant's prior experience to be more or less extensive depending on how familiar the participant is with the content and methodologies introduced at the internship site. Ideally, follow-up to the internship should also take place once the participant has returned to his/her regular job assignment to reaffirm new skills (Joyce and Showers 1988).

This internship model can be adapted to meet the needs of any site provided the criteria outlined above are met. The goals of the organization, the identification of needed knowledge and skills, and the selection of an internship site are necessary components in developing an internship plan. Finding the match between the site and what it has to offer, the needs of the participant, the goals of the training, and appropriate educational strategies ensure the success of this model.

References Cited

Gordon, Deanna, and Margaret Moles. 1991. Mentoring becomes staff development: A case of serendipity. *NASSP Bulletin* 78(559):66-70.

Joyce, Bruce, and Beverly Showers. 1988. Student achievement through staff development. New York, NY: Longman.

Milstein, Mike M., Betty M. Bobroff, and L. Nan Restine. 1991. *Internship Programs in Educational Administration: A Guide to Preparing Educational Leaders.* New York, NY: Teachers College Press.

Additional References

Caldwell, Sarah DeJarnette, ed. 1989. *Staff Development: A Handbook of Effective Practices.* Oxford, OH: National Staff Development Council.

Feden, Preston D., Robert M. Vogel, and Gary K. Clabaugh. 1992. Preparing expert teachers. *Educational Horizons* 70(3):130–34.

Fullan, Michael G. 1993. Why teachers must become change agents. *Educational Leadership* 50(6):12-17.

Loucks-Horsley, Susan, Catherine K. Harding, Margaret A.Arbuckle, Lynn B. Murray, Cynthia Dubea, and Martha K.Williams. 1987. *Continuing to Learn: A Guidebook for Teacher Development.* Andover, MA: Regional Laboratory for Educational Improvement of the Northeast and Islands.

Showers, Beverly, and Bruce Joyce. 1996. The evolution of peer coaching. *Educational Leadership* 53(6):12-16.

Stevens, Nancy H. 1995. R and R for mentors: Renewal and reaffirmation for mentors as benefits from the mentoring experience. *Educational Horizons* 73(3):130–37.

FROM THE CLASSROOM TO THE FOREST: APPLYING FORMAL EDUCATIONAL RESEARCH TO THE INFORMAL (INTERPRETIVE) SETTING

Judith Visty
Everglades National Park
40001 SR 9336
Homestead, FL 33034

***ABSTRACT**: Research on formal education—that is education in school setttings—examines effective teaching strategies and how learning takes place. Much of this research is relevant to interpretation—teaching in informal settings. This paper will discuss five topics in educational research and how they apply in interpretive settings.*

***KEYWORDS**: Education, naive conceptions, learning modalities, questioning techniques.*

Constructivist Learning/Naive Conceptions

Psychologists from Rousseau to Piaget have argued that we "construct" our own reality based on our personal experience. This learning philosophy views humans as constantly trying to make sense of their world, fitting new facts to their old framework.

A ranger in Everglades National Park had an encounter with some park users on a boat that illustrates the constructivist theory. After an exchange of pleasantries, the visitors commented how they knew the Everglades were in trouble, but seeing all the birds fall out of the sky around them made them realize how serious the situation really was. These visitors fit their new experience (i.e., watching pelicans, ospreys, terns and skimmers diving into the water) with their understanding of the Everglades developed through print and other media. All of us have "constructed" our own theories in this manner.

In education these errant theories are referred to as naive conceptions (Connor 1990). Their significance for education/interpretation lies in the fact that if you haven't addressed fundamental underlying misperceptions/inaccurate concepts, it is likely that what you say will have little impact on the learner's knowledge and value system. Educational research provides strong evidence that naive conceptions are remarkably robust, held separable from new information (Connor 1990). An innocuous but tenacious example of a constructed reality is the widespread belief that alligators have green skin. I have seen this perception, constructed from cartoon shows, hold fast even when an individual is seeing an alligator.

The Everglades Ecosystem is currently the object of a large-scale restoration plan. Unfortunately conceptions about this project for many Miami residents include the idea that restoration would cause water shortages for urban areas. This is a naive conception because much fresh water in South Florida is currently dumped into the Atlantic ocean through a system of canals. Rerouting water flow by changing the canal system will help Everglades National Park wildlife and will also potentially serve to recharge urban area aquifers. However, in order for restoration to be successfully discussed with Miami residents, it is important to address their commonly held naive conception.

Another example that applies to many areas is the widespread belief that you can tell if water is polluted by its appearance. An interpreter drinking brown tannic acid-tinted water may challenge this notion. In fact, such a "discrepant event" (McGlathery 1978), when it can be created, is probably the most effective way to challenge a naive conception.

For all interpreters/park managers, an obvious application of "constructivist theory" is to ask the question: "What naive conceptions do visitors commonly hold about our area or management techniques?" Naive conceptions are often revealed by the right, open-ended questions: "How do we know when water is polluted?" This brings us to our next research topic.

Questioning Techniques

Interpreters generally think of asking questions as a way to make presentations more interactive. Classroom research demonstrates that two aspects of questioning should be considered.

Question Balance

Most interpretive textbooks provide a basic taxonomy of question types. One simple educational version describes these four types of questions and their function (McGlathery 1978):

224

- Managerial—to keep classroom operations moving
- Rhetorical—to emphasize a point, to reinforce an idea or statement
- Closed—to check the retention of previously learned information, or to focus thinking on a particular point
- Open—to promote discussion or to stimulate thinking.

Managerial level and rhetorical questions usually require little real thinking; they are of low cognitive level. Closed questions can be low, or are high level when they encourage the listener to classify, make comparisons, or use their own judgment. Open questions are generally high cognitive level and have a variety of "right" answers. What seems to work best is a 50-50 balance (McGlathery 1978). Too many low-level questions result in dull presentations. Too many high-level questions may result in poor overall participation and a lower level of achievement. The tendency of most teachers, and I suspect, many interpreters, is to ask mostly closed questions, as they make us feel successful. Questioning research (Rowe 1973) also revealed that many teachers asked too many questions, two or three per minute. I have watched interpreters do the same.

The recommendation for interpreters/supervisors derived from this research is to audio tape programs and examine questioning types/style. In my experience a tape may make obvious a flawed questioning style. For example, one problem style I have observed perpetually seeks the "correct" answer to open-ended questions, frustrating the audience. For a good interpreter, listening to a tape may suggest the one or two questions that will turn a good program into a superlative one. Blosser (1991) outlines a method for teachers to analyze their questioning techniques.

Asking...Waiting

The type of questions asked are one important aspect of questioning. However, Rowe's (1973) work in the classroom revealed a second concern I have not seen mentioned in interpretive textbooks: the value of wait time. In an analysis of 200 teachers, Rowe found the average wait time after a question was less than 1 second. She also noted that in only three of the 200 classrooms did students regularly ask questions. These three classrooms had teachers who waited longer than the 1 second.

Although I do not have any data, I believe wait time is also a problem common to interpreters. Here are the characteristics of short wait time answers:

- Students gave responses that called for memory rather than higher level thinking.
- A few students dominated the answering.
- "I don't know" responses, as well as no answers, were common.
- Teachers allowed relatively little flexibility in the responses they found acceptable.

Taking these observations a step further, it appears that the most effective teachers actually wait twice, first for an initial answer and again for additional answers, bringing the total time to 3 to 5 seconds (Blosser 1991). This double wait time has the following results (McGlathery 1978):

- The length of responses increased.
- The incidence of speculative responses increased.
- Student confidence increased.
- The incidence of answers from "slow" students increased.
- The number of appropriate responses increased.
- The amount of student-to-student interaction increased.

Wait time appears to benefit not just students, but also teachers as classes became more interesting to teach. Rowe (1973) listed three changes in teacher behavior:

- There is increased flexibility in teacher responses.
- Teacher questioning patterns become more flexible.
- Teacher expectations for performance of students rated as "slow" may change.

For interpreters, wait time is easy to evaluate from a taped presentation. I have also found it helpful to verbally encourage audiences to pause before answering an "open" question. When we truly want to improve the interactiveness of our presentations, questioning techniques need to be considered. Let's look now at another topic that suggests how to improve learner involvement.

Learning Modalities

Often we tell 'baby naturalists' to involve all five senses in their program plans. Certainly this is excellent advice as substantiated by Diane Ackerman's wonderful book *A Natural History of the Senses* (Ackerman 1993). Learning modalities have some parallels to multisensory interpretation. During the past fifteen years many cognitive researchers have focused on the variety of ways in which children and adults learn. This body of research provides evidence that different individuals use different learning "modes."

One of the foremost spokesperson's for multimodal learning is Howard Gardner. His now classic book *Frames of Mind* (1983) outlines seven types of "intelligence" corresponding to ways that individuals learn. These are: linguistic, logical-mathematical, musical, bodily-kinesthetic, spatial, inter-personal, and intra-personal.

Our culture and school systems, Gardner argues, are heavily weighted to use the first two modes. As a result we fail to teach in ways that are meaningful to large segments of our audience. Teaching teachers, or interpreters, to use a variety of modes involves looking back over the lesson plan or program outline to add stimuli or approaches characteristic of as many modes as practical. Thus an Everglades program about frogs might include, in addition to verbal remarks, real frogs to touch, pictures of frogs, frog puppets, a frog song tape, frog poetry, hopping like a frog, and information on how frogs are providing medicines for humans.

It is impossible to discuss all the implications of multimodal research relevant to interpretation in this short space. One has already been hinted at, the importance of using a variety of teaching modes when working with multicultural groups. Another one I'd like to particularly mention, is the importance of the spatial mode. Gardner (1983) believes this may be the dominant mode of processing information for large segments of any population. If so, having accurate visual aids to accompany presentations becomes very significant.

Varying modalities seems to help not just the learner, but also the interpreter as they are challenged to access unused portions of their own brains. A combination of modes is fortunately unavoidable on any nature walk. It is actually this premise of the effectiveness of different learning modes that leads to millions of school children being taken on field trips each year. Field trips as learning experiences are our next topic.

The Field Trip Milieu

As the supervisor of a large field trip program, I was curious to see what information might be available about field trips as learning contexts. To date I have noted two relevant and related principles. First, since observation begins with pre-existing ideas, naive observers have trouble selecting aspects of their experience to consider (Watson 1975). Because of this, participants turned loose at a museum or natural area require some prior cues as to what is important. The Everglades program, for instance, depends heavily on teacher workshops which preview field trips, so teachers are able to properly cue students in the classroom prior to their arrival in the park.

The second principle regarding field trips is that extremely novel settings place demands on learners that can interfere with concept learning. In a study comparing reactions of 3rd and 5th graders to school yard and off-site nature center filed trips Falk and Balling (1982) found that 3rd graders learned less in the off-site location, apparently because they had trouble staying task-focused. On the other hand, 5th graders did better in the unfamiliar environment; they appeared bored at the school yard site. The authors suggest that ideal field trips provide moderate amounts of novelty for the audience.

Problems with Praise

My fifth and last educational research topic is "praise." I became interested in this aspect of presentations when I audited employees who seemed to praise excessively. These interpreters argued this was appropriate for building student self-esteem, especially with groups from disadvantaged backgrounds. For those of you who do not work with students, I would suggest this topic is also relevant to supervision.

Can Praise Be Detrimental?

The answer to this question based on educational research is an emphatic "yes!" Too much praise or positive reinforcement apparently has a tendency to reduce exploration and inquiry, perhaps because it undermines confidence (Shymansky 1978). It may also discourage the sharing of ideas since one individual may be praised for an idea first developed by another (Blosser 1991). In my observation, overly enthusiastic praisers strike a false note that children especially are quick to detect. Phrases such as "I am so proud of you" also subtly shift the responsibility for the behavior to the praiser.

Effective Praise

In their useful book *How to Talk So Kids Will Listen, and Listen So Kids Will Talk*, Fable and Mazlish (1982) state that frequent praise can undermine motivation since it is external in nature. Ideally, motivation should be intrinsic to the individual, supporting enjoyable activity even in the absence of others. To praise a child effectively, they recommend (1) describing what you see and (2) describing what you feel. They then suggest pausing (another opportunity to practice wait time!). Often the individual being praised will then supply their own positive comment, effectively praising themselves. Fable and Mazlish (1982) then suggest summarizing praiseworthy behavior in one word. I have used this technique successfully with employees, especially with those lacking confidence.

Conclusion

A study of educational research has stimulated me to strengthen some aspects of my interpretive presentations and audits. It has also provided validation for the type of educational work that interpreters do. The approaches commonly taken by interpeters, in particular those that provoke individuals to examine their naive conceptions, cue their audiences prior to experiences, and incorporate a variety of teaching modes, are very much in line with current cognitive research. Other educational research on wait time after questions, limiting environmental novelty, and the effective use of praise can also be applied by interpeters.

References Cited

Ackerman, Diane. 1993. *A Natural History of the Senses.* New York, NY: Random House.

Blosser, Patricia E. 1991. *How to Ask the Right Questions.* Washington, D.C.: National Science Teachers Association. 15 pp.

Connor, James V. 1990. Naive conceptions and the school science curriculum. In: *What Research Says to the Science Teacher,* Vol. 6. Washington, D.C.: National Science Teachers Association: 5-18.

Fable, Adele, and Elaine Mazlish. 1982. *How to Talk So Kids Will Listen, and Listen So Kids Will Talk.* New York, NY: Avon Books.

Falk, John H., and John D. Balling. 1982. The field trip milieu: learning and behavior as a function of contextual events. *Journal of Educational Research* 76(1):22-28.

Gardner, Howard. 1983. *Frames of Mind.* New York, NY: Basic Books.

McGlathery, Glenn. 1978. Analyzing the questioning behaviors of science teachers. In: *What Research Says to the Science Teacher,* Vol. 1. Washington, D.C.: National Science Teachers Association: 13-30.

McKnight, Betty J. 1989. Problem solving in elementary school science. In: *What Research Says to the Science Teacher,* Vol. 5. Washington, D.C.: National Science Teachers Association: 7-11.

Rowe, Mary Budd. 1973. *Teaching Science as Continuous Inquiry.* New York, NY: McGraw-Hill Book Co.

Shymansky, James A. 1978. How teaching strategies affect students: implications for teaching science. In: *What Research Says to the Science Teacher,* Vol. 1. Washington, D.C.: National Science Teachers Association: 31-39.

Watson, Fletcher G. 1978. Learning science from planned experiences. In: *What Research Says to the Science Teacher,* Vol. 1. Washington, D.C.: National Science Teachers Association: 83-94.

IMPLEMENTING A NATURAL HISTORY INTERPRETATION MAJOR

Dr. David V. McCalley, Professor/Associate Director
Dr. Daryl Smith, Professor Biology/Science Education
Center for Energy and Environmental Education
Cedar Falls, IA 50614-0293

ABSTRACT: *According to Gail Vander Stoep, few interpretation majors exist in the United States. This presentation details the natural history interpretation major at the University of Northern Iowa, and seeks professional criticism.*

KEYWORDS: *Interpretation, major, biology, methods.*

Introduction

Growing from a successful teacher's college into a medium scope university resulted in many changes and new opportunities for the University of Northern Iowa. From a single science department came several departments including one in biology. As this new department organized itself, the decision was made to offer several varieties of majors to address the spectrum of biological careers and advanced education. One of these is the natural history interpretation major. Other majors are focused on teaching, medicine, and biotechnology. An additional major is somewhat more open and allows students to prepare themselves for graduate study in botany, zoology, anatomy, systematics, etc.

In the 1970s, Iowa's County Conservation Board system began to grow and with it, the establishment of nature centers. Most of Iowa's ninety-nine counties have county conservation boards (CCBs), and most CCBs have at least one interpreter, known variously as naturalists, naturalist-rangers, or environmental education specialists. The perceived need to meet a growing demand for people trained as interpreters spurred UNI's biology department faculty to develop its initial natural history interpretation program. Prior to the development of a major, the department elected to produce an emphasis within an existing biology major. The major and its emphasis was limited to the traditional fifty-five credit hours of which fifty-two credit hours were biology, chemistry, and geology courses as seen in Figure 1. Also required was a new course developed for this emphasis: Experiences in Environmental Education.

Initial Natural History Interpretation Major

In 1982, a proposed Natural History Interpretation major was developed and circulated for critique to a small group of interested biology department faculty. General agreement was obtained and the structure was proposed to the department. Missing from the proposed new major was an internship requirement. This was omitted because of resistance from within the department to include these credits at the expense of biology credits. However, a single "methods" course was accepted.

Biology (33-34 credit hours)
Gen. Bio. I and II
Ecology
Field Zoology
Plant Systematics
Management of Recreational Land
Conservation of Iowa Resources
Entomology or Invertebrate Zoology
Community or Population Ecology
Current Environmental Issues

Cognate Sciences (15 credit hours)
General Chemistry I and II
Physical Geology
Earth History

Interpretation (3 credit hours)
Experiences in Environmental Education

Electives (3-4 credit hours)
Biology of Earth Science

Total (55 credit hours)

Figure 1. Initial natural history interpretation major, 1982.

This major was first published in the 1982–1983 UNI catalog, however, students were electing the curriculum prior to that time. The initial courses were similar to those of the "general" biology major. The notable differences were the requirement of only one year of inorganic chemistry and the specification of earth science as a cognate science requirement.

Within a short time, it was found that students drawn to the new major were of a mixed group. Many were interested in becoming a park ranger or a conservation officer. Some considered it to be a stepping stone to a fish and wildlife master's degree program. The single "methods" course, Experiences in Environmental Education, was seen as superfluous to these students, soon to become a plurality within the major. In addition, because no internship was required, graduates seeking jobs found they were at a considerable disadvantage when compared with graduates with recreation majors. While they were well educated field biologists, they lacked the education in "people skills" necessary to be a successful interpreter.

In spite of this, a number of students did apply for and obtain positions as interpreters and were successful. Most of these students were found to be those who had volunteered at the local nature center during the academic year, and sought summer employment with their local CCBs, or in comparable jobs.

In time, faculty and situations changed presenting the opportunity to consider restructuring the natural history interpretation major. As this was considered, the model of the biology teaching major was looked to as an example. The major difference between the biology teaching major and other majors in the department is the requirement of a series of methods courses in science education within the teaching major. In addition, professional education courses are required outside the teaching major. These include a twelve credit hour requirement of student teaching.

The New Natural History Major

The new major addresses the criticism of the preceding one. It includes a series of methods courses and an internship requirement. In addition, two of the methods courses require a minimum of fifteen clock hours of supervised volunteer work in a nature center, museum, or a similar setting. The third methods course is taken as a corequisite with the internship, although at this time, it is often taken after the internship.

The biology and cognate science courses were selected to provide a sound foundation in natural history. A significant departure from the previous major exists in the chemistry requirement. Previously, students took the traditional courses in the chemistry sequence, each of which was an inorganic chemistry. In the new major, students take Applied Inorganic Chemistry and Applied Organic and Biochemistry. These courses require two semesters to complete as did the inorganic chemistry requirement of the previous major.

Following a trend in the Biology Department and other university departments, the new natural history interpretation major became an extended major. The usual number of hours for a major is considered to be 55. Expanded majors may reach to over seventy hours. This has allowed the inclusion of an increased number of hours in the methods package and the addition of the internship within the natural history interpretation major. Students selecting the major, immediately know what is required and are more likely directing their lives toward the interpretation profession rather than a related one.

Biology (26 credit hours)
General Biology I and II
Field Zoology
Plant Systematics
Ecology
Conservation of Iowa Resources
Management of Recreational Land

Cognate Sciences (16 credit hours)
Applied Inorganic Chemistry
Applied Organic and Biochemistry
Physical Geology
Earth History

Interpretation (19 credit hours)
Experiences in Environmental Education
Interpretive Programs Techniques for Naturalists
Internship
Interpretive Programs Seminar

Electives (11 credit hours)
Biology and Earth Science

Total (72 credit hours)

Figure 2. Revised natural history interpretation major, an extended major, 1994.

The Methods Courses

There are three courses in the methods package: Experiences in Environmental Education, a redesigned and expanded version of the course by the same name in the previous major, Interpretive Programs Techniques for Naturalists, and Interpretive Programs Seminar. The descriptions for each of these courses are included in Figure 3. In addition to these courses, majors are required to complete a ten credit hour internship. Typically the internship is as an interpreter at a center, however some are with museums, the National Park Service, or the Army Corps of Engineers.

Conclusion

Since the newly designed Natural History Interpretation major has been available, its numbers have been steadily rising. Students in the major are less likely to have selected it for reasons other than to prepare themselves to enter the

Experience in Environmental Education—4 Hours
Current trends in theory and content of the environmental education process; theory and practice with techniques, materials, and equipment of environmental education, and interpretation in the classroom and the out-of-doors. Use of nature centers, parks, school grounds for learning and interpretation are included.

Interpretive Programs Techniques for Naturalists—3 Hours
Techniques for development and delivery of interpretive programs; recruiting public participation; fund raising; writing proposals; organization of federal, state, and local park agencies; budgeting; coordination of citizen support groups.

Interpretive Programs Seminar—2 Hours
Designed to follow the internship experience during the last two weeks of the same semester. Comparison and assessment of interpretive programs including goals, objectives, dissemination techniques, and effects on visitor groups.

Figure 3. Methods courses in the UNI natural history interpretation major.

interpretive profession. With the increase in numbers of students with this major who are volunteering within the community has come an increase in requests for more services from the program.

Recently, a graduate interpreter was assigned to coordinate the outreach activities of the program. The duties have included contacting schools, nature centers, and museums in the local community to assess volunteer needs, interpret these needs to our majors in the methods courses, and to coordinate and assess student volunteers. The success of this activity has had discomforting side effects—we now find it more difficult to obtain our own students to serve in service programs of the center.

References

Vander Stoep, Gail A., ed. 1991. *Interpretation: A Resource and Curricula Guide for the United States and Canada.* Ft. Collins, CO: The National Association for Interpretation.

Additional References

Ham, Sam H. 1992. *Environmental Interpretation.* Golden, CO: North American Press.

Jenseth, Richard, Edward E. Lotto. 1996. *Constructing Nature.* Upper Saddle River, NJ: Prentice Hall.

Tilden, Freeman. 1977. *Interpreting Our Heritage.* 3rd ed. Chapel Hill, NC: The University of North Carolina.

INTERPRETATION AS AN EMOTIONAL JOURNEY—MEMORIALIZING FIREFIGHTERS ON STORM KING

Kathy Voth, Interpretive Specialist
Bureau of Land Management, Grand Junction District
2815 H Road
Grand Junction, CO 81506

ABSTRACT: *Successful interpretation invites the participant to make a personal connection, to feel something. As an interpreter, you must experience that feeling at a much greater intensity, and with much greater intimacy for your audience to feel it to even a very small degree. This paper uses the interpretation of a fire that killed fourteen firefighters as a vehicle to discuss the price of that emotional involvement and how interpreters might care for themselves as they work.*

KEYWORDS: *Emotional connections, interpreter mental health.*

Introduction

On July 6, 1994, 49 firefighters were attacking the South Canyon fire on Storm King Mountain 7 miles west of Glenwood Springs, Colorado. That afternoon, the fire exploded and raced towards the firefighters. Thirty-five escaped, but 14 were trapped on the steep slopes and died. After the deaths, hundreds of visitors climbed the mountain to pay their respects and try to understand what had happened.

A trail was eventually constructed by the Bureau of Land Management, the U.S. Forest Service, and volunteers. This trail is about remembering, about honoring our dead, and about honoring our living. It is about walking in another man's moccasins before passing judgment, and learning that maybe there are no easy answers. As the trail's interpreter, this trail was also about walking to the edge of my emotional envelope and learning that the emotions and the intensity with which they are felt by the storyteller are critical to the success of a project. I also learned that emotional connection comes at a price. It is a price I know we have all paid, usually without even being aware of it.

Today I'd like to take you on part of the journey behind this project. I will share with you the impact it had on me. I invite you to observe your own emotions, both in response to this project, and to other projects you've done in the past. Then we'll explore some of the ways we touch our audiences with our emotions, our enthusiasm, our connection to our topic, how experiencing that changes us, and how we might better care for ourselves through the process.

Background

For me, this project began on July 6, 1994. I had been working the fire information trailer in Grand Junction for about a week. Due to the number of fires, we had set up the trailer and were providing information on all fires on the western slope of Colorado. We had about 100 fires going that day and the one in South Canyon was the least of our worries. My day had begun at 7:30 a.m. At about 4:45 p.m. I got a call that the South Canyon fire had blown, that there were shelter deployments and possible fatalities. I felt like someone had hit me hard in the stomach and for three days after, I couldn't draw a full breath. I had a partial list in front of me of crews working the fire, and it included co-workers and friends. But in order to do my job, I had to put my personal fears aside and begin the job of sorting out fact from rumor and relaying that information on.

The phone rang all night long with calls from media as far away as London. Usually all I had to do was place the phone back in the cradle and pick it up to begin speaking to the next person. At about 1:00 a.m., I began to get phone calls from firefighters' families all across the country, trying to find out where their loved ones might be. The calls lasted until about 7:30 in the morning, when the Incident Management Team in Glenwood Springs was able to begin taking over.

I was immediately struck by the very personal connection people made to the fire. In between phone calls from CNN, NBC, and many others, with interviewers wondering why firefighters would have been sent to this fire, who was responsible for the deaths, how could they locate a survivor to interview, I got calls from anxious wives, sisters, fathers, and mothers. I spoke to a grandfather in Pueblo looking for his granddaughter. You could hear the joy in his voice when he heard she was safe, and then suddenly he was sobbing over the phone. "That's very good for me, but very bad for someone else," he said. People called in to volunteer goods and services because they had a house in the area, or a house like the one being saved, or had met a firefighter once, or simply because they were a father, a mother, a brother or a sister, and they could imagine what it would be like to lose someone they loved.

Shawn Lawler, my partner in interpretation, relieved me from fire information officer duties, and experienced much the same thing. This is the background we took with us as we began the interpretive plan for this project.

Trail Building

The Storm King Fourteen Memorial Trail was built by a community literally walking through the grieving process. It began as a footpath made by people hiking the mountain; families, friends, and local residents, attempting to understand what had happened. The actual construction of the trail, done at the urging of the local community and with their labor, was part of their healing process. When constructed, it was left steep and rough to help visitors imagine the experience of a firefighter.

There are many voices to listen to on this trail. There are the voices of the firefighters who lost their lives here. There are the voices of firefighters who continue to work. There is the voice of the trail, talking to you through your legs and lungs, saying "This hurts, this is hard, this is very steep." There are the voices of the birds, the wind in the trees, the highway below. And then there is the silence. All are part of the experience, and part of the interpretation. The signs along this trail were designed so they would not overwhelm any of the other voices, but would become part of the choir. Often, if someone whispers to you, you end up being quieter, and even whispering back. The signs were designed to be the whispers that would encourage visitors to be quieter, to pay more attention to everything around them.

The Journey

Shawn Lawler and I put the draft interpretive plan together in two weeks. The short time frame was possible because of our background in the project, our very strong, personal connection to the event, and because we were familiar with the kinds of questions people were asking. Once the draft was finished I began the process of reviewing it with families, administrators, the local community, and the community of firefighters. This is a normal part of the process and one you are all familiar with. However, for this project it was a much more intense experience because of the event we were interpreting, the national interest it had generated, and the very raw emotions people were dealing with. People didn't just comment, they shared their feelings, we talked like old friends, and we formed close personal bonds. Not only did I experience my own emotions about the event, but I shared those of my new friends.

For me the most difficult part of this project was writing the biography for each firefighter. Originally I did not support the idea of the pictures and biographies, but it was a request from the families. After talking to them in depth, and explaining the difficulties of trying to compress someone's life into a few short sentences, I agreed to try if they would provide materials. Day by day, envelopes from families arrived. As I opened them, they revealed smiling, vibrant people. I spent hours on the phone with families and friends. They told me wonderful stories about their loved ones' lives and horrible details about their deaths. I was introduced to girls who could have been my friends, guys I could have laughed with, to people who shared many of my own beliefs. I got to know Doug Dunbar's sense of humor, which areas Levi Brinkley was going to ski next, and grew to respect Jim Thrash and his efforts to preserve wilderness. I carried each of them home with me as I struggled to put together just the right 160 words that would both satisfy their families and relay their special qualities to someone who wouldn't have the chance to know them. I brought the fourteen to life inside my head, but was constantly and painfully aware of their deaths.

I would describe my experience as one of reliving the events on Storm King over and over, and feeling it from the point of view of survivors, families, friends, firefighters, and administrators. My task was to seek a collective comfort and to distill these emotions into those very few, right words that would bring the experience alive for future visitors. Except for the fact that I was dealing with a tragedy, the experience was not so different from other projects I've worked on, or that you may have worked on. When working on the Unaweep/Tabeguache Scenic and Historic Byway, I immersed myself in the history of the area, talking to long-time residents, encouraging them to share even the most trivial tidbits, researched geologic history, Ute Indians and prehistoric people, all in an effort to understand so much about the topic that I could distill it to its essence for visitors.

The Journey's Reward

Though painful at times, there was a reward for having invested so much emotional energy into the Storm King Fourteen Memorial Trail project. I experienced some of the most beautiful and most touching moments in my life on Storm King Mountain. I spent a lot of time at the trailhead greeting visitors and hiked this trail with a wide variety of people and watched their reactions and the emotional connection they made. In all cases, this trail seems to take us on a journey into our hopes and fears. I have watched people weep; for themselves, for what is lost, and for what can still be. I sometimes think those tears are the very best of us because I saw how they encouraged individuals to reach out and care more for each other. Watching people on the mountain and later in the parking lot, holding on to loved ones, you can almost see a realignment of their priorities in their eyes. It was my personal goal for this project that the trail continue to do that for people, creating, in its own small way, a kinder gentler world.

If I had not gone into this project the way I did, feeling the horror and grief, immersing myself in its details, in the emotions of those I worked with, the end result would not have touched visitors the way it does. Successful interpretation invites the participant to make a personal connection, to FEEL something. As an interpreter, you must experience that feeling at a much greater intensity, with much greater intimacy for your audience to feel it to even a very small degree. Consider those projects you thought you did best. Were they the ones you felt most strongly about, found very interesting, fought for particular designs, or wording because you KNEW they were right?

In looking back at my own resume, I have many examples illustrating this. For example, I've led interpretive hikes or taught classes on subjects that intrigue me, and I'm excited and involved in sharing information and I believe that helping others understand will make a difference to my community or planet. Participants sparkle back at me, they laugh, they share, and years later I meet them in the grocery store and they remind me of how much they enjoyed that day. On the other hand, I once taught a class on neotropical migratory songbirds. Now, I think the birds are pretty, they're OK, but I'm really not that interested in them. Getting the kids to respond was like pulling teeth, and though I could see they were picking up the facts, there was no sparkle, no laughter, *no fun*. At the end of the session, I asked "OK, so what do you think of neotropical migratory songbirds?" Finally one boy hesitantly raised his hand, "Well, they're pretty, they're OK, but I'm really not that interested in them." I had gotten back exactly the level of enthusiasm and emotional connection I had put into the project.

Just to test this idea, I spoke with the two sculptors who developed the two Storm King monuments to the firefighters. I've watched people visit the monument in Glenwood Springs. Its presence seems to invite solemnity and introspection. Visitors are very quiet and reflective. I've heard of similar responses to the monument in Prineville. Since many of the visitors don't even know details of the fire, I believe it is something in the way the artists expressed themselves and how they felt. Joyce Killibrew, who created the Glenwood Springs Monument, told me of crying as she turned clay into figures. David Nelson called one day to ask me to send copies of the biographies since he knew he could not complete the Prineville Monument without understanding those who had died. The three of us have cried on the phone together as we tried to explain our feelings for the Storm King Fourteen.

The Journey's Toll

My investment in this project and others has always come at a price often expressed as mental and physical fatigue. A friend of mine who has experienced this as well calls it the "Merlin Effect." Whenever Merlin the Magician completed an especially difficult spell or trick, he was exhausted and had to rest. Sometimes he would sleep for months or even years. If he didn't rest, he was grumpy, cranky, and incapable of working.

So what are some of the clues that *you* might be running into the Merlin Effect? As I worked on this presentation, I interviewed other interpreters and people whose work seemed to touch audiences. I'd like to share with you my discussion about this with Joyce Killibrew. I still find it difficult to discuss the depths of my own journey, so instead, I'd like to tell you about Joyce's because it is so similar to my own. She began sculpting two of the standing figures as an outlet for the grief she felt. She had been a firefighter, has friends who are firefighters, and wanted to express her love and sorrow to the families of the Storm King Fourteen. When she was later selected as the artist to create the monument, she began working 16 to 20 hour days. She had to move 1,000 pounds of clay from raw material into sculpture in less than two months if she was to meet the deadline. It strained her marriage. She felt a huge sense of responsibility because this was her first large bronze and she questioned her abilities. She felt guilty that the high level of media interest was focusing too much on her and not on the fourteen who had lost their lives. The day after the ceremony to dedicate the trail and the monument, she became ill for a week. When she was up and about again, she felt a huge void in her life. She asked the questions that I've asked after this and a number of other projects: "So that's done, now what? I will never be able to top that."

Interpreter Care and Feeding

So how do we take care of ourselves? I won't even pretend that I have all the answers because each of us deals with stress a little bit differently. But as I researched this and spoke to others, I came up with some common themes.

First, of course, is a support system. Two things you need to remember about your support system: First, *use it!* In some cases your support system may include people who are removed from your project and the invitation is to believe "they don't understand, they can't help," and that leads to isolation. For example, I noticed that no one in my office came to my area once I began working on the biographies of the firefighters. I decided they were uncomfortable with death, and that I'd been placed under quarantine for my close relationship to it. I isolated myself at a time when I really needed friends. I've since found out that if I'd just reached out, they would have responded. Second: *maintain your support system!* Getting emotionally involved in a project can sometimes blind you to the importance of other things in the world. Members of your support system can feel abandoned, and they're right, they are being abandoned. But without your support system,

23.1

your future is bleak. Your ability to heal is dramatically reduced. Remember, if you jam your feet through the bottom of your lifeboat because you were rowing too hard, you'll never make it to shore.

Another theme is understanding your personal limits, or knowing where you end and others begin. You can *invite* someone to make an emotional connection to your topic, but you cannot *make* them do it. You can send them an engraved invitation to listen, gilded with all the enthusiasm and emotion you can muster, but you cannot make them hear. I really struggled with this. Not only did I want to touch Storm King's visitors, but I also wanted to comfort the survivors. No matter what I did, the families still hurt, and no matter what I did, some people left the mountain with no comment other than, "The trail is *too* steep!" Because I had given myself no personal limits, I focused on what I thought were my failures, rather than the successes of grief that was eased, and hearts that were touched. Now I know that there will always be people who are on a different path and may not have arrived at a point where they are interested in or are ready to share what I'm saying. It's true after all, you can lead a horse to water, but you can't make him drink.

Then there is the void, and the feeling of having completed the last, greatest thing you'll ever do. In my life, I may never again do a project with the significance of Storm King. Notice that I didn't say "as significant as Storm King." When I look at my life, I see a lot of significant events. Each was significant in a different way, and each had an important outcome. To measure them against each other is to compare apples and oranges. To help myself back out of the void, I've changed the way I look at my process. Instead of thinking of myself climbing a mountain with its peak as my goal, I am now walking the Continental Divide. There are valleys and ridges that are important because they define the mountains. At each point, if I am working within my personal truth, I am still doing something significant.

Finally, remember time is not your enemy, it is your friend. Breaks from your project can put it into perspective and might reduce your down time after completion. Try to schedule time off when your project is over to "sharpen the saw." We seem to be willing to allow time for healing and therapy when we're getting over physical injuries. No one questioned my time off after knee surgery. Remember that your brain, heart, and soul need time and therapy too.

Finally...

Joyce Killibrew told me "When we can feel our grief and express it, it opens doors for other people." The same is true for emotions other than grief. Find those things you feel passionately about, explore those feelings, both pleasant and unpleasant. Give yourself permission to feel them and share them with your audience. In fact, as you work, remind yourself to feel them. Those of us who can do that hold a special and very important position. We open doors for those who can't quite reach the knob. Recognize your position. Hold doors open for yourself and others. And ensure that you'll be available to do that for a long time by taking very good care of yourself.

INTERPRETIVE FALLACIES AND THEIR EFFECTS ON CREDIBILITY

David Matthew Zuefle, Ph.D.
Assistant Professor, Department of Leisure Studies
420-E HHP Building
University of North Carolina at Greensboro
Greensboro, North Carolina 27412-5001
(910)334-4269, FAX (910)334-3238
zuefled@homans.uncg.edu

ABSTRACT: *Credibility is hard-won and easily lost. The easiest way to lose credibility is by disseminating poor or inaccurate information. Interpreters must work more diligently to ensure personal competency. The interpretive profesion must evolve to provide an environment for professional criticism.*

KEYWORDS: *Credibility, fallacies, critique.*

Introduction and Discussion

Credibility is an elusive thing. It has qualities highly akin to a person's night vision. Anyone who has led or attended a night hike knows that it takes a while for our eyes to acclimatize to the absence of light. When they do, the vision is surprisingly good. But when some source of artificial light (a car, a flashlight) unexpectedly intervenes, the pupil constricts, the night vision is reduced, and we must wait patiently again to regain what was so quickly lost. So it is with credibility: it is hard-won and easily forfeited.

As interpreters, we can do many things to secure our credibility. Our appearance and demeanor are paramount, especially to what Paul Risk once called our "initial credibility" (1976), and these attributes should never be neglected. But my concerns here are the interpersonal exchanges that are made after initial credibility is established, the exchanges that are often information-rich. These information-rich exchanges affect what can be called *continuing credibility*. Continuing credibility is important because it influences not only what impression the visitor has of the individual interpreter, but of the interpretive profession as a whole.

The easiest way to damage continuing credibility is to disseminate poor or inaccurate information. In a recent *Legacy* commentary, Larry Beck and I chronicled a number of widely circulated interpretive fallacies and misconceptions. From the now-famous controversy over Chief Seattle's speech to the martin-mosquito myth (see Cable and Brack 1985), the interpretive field has its share of fallacies that resurface from time to time.

Along with these widespread institutionalized fallacies, and perhaps far more insidious, are the "pet" fallacies harbored by individual interpreters. Pet fallacies are usually passed on orally or in informal writings, are the products of individuals or small groups, and are especially tenacious in their hold. It seems that sometimes they just sound so interesting or compelling that they are rarely investigated.

A few years back, at the beginning of my interpretive career, I was leading a wildflower hike in southern Ohio with a good friend and fellow interpretive tyro. We came across a nice patch of May apples, and he paused to talk to our group of particularly intent and enthusiastic eleven year-olds. "You'll notice," my friend began, "that some of these umbrella-shaped plants have two leaves, and some only one." So far so good. "The two-leafed plants are the only ones with flowers, and they are the girl-plants; while the single-leafed plants are the boys," he said confidently. I scratched my head silently, "is that true?" I asked myself. Later that day I checked out a field guide, and shared my findings with my friend. I told him that I believed the May apple to have what I understood to be a perfect flower—one with both male and female parts as opposed to being dioecious (or monoecious). It turned out that he had used the metaphor frequently, and was not concerned about its accuracy. "Oh well, who cares?" he offered. "I had more important messages to communicate than scientific nomenclature; those messages are the things that they will remember."

While I agreed with my friend about the importance of the big picture, I could not agree that we interpreters should abnegate our responsibility to be accurate when calling upon factual information. Adopting and disseminating misinformation is dangerously easy to do though; I have caught myself embracing misconceptions and fallacies before, and I suspect most other interpreters have as well.

Problems with Fallacies Unique to Interpretation

Dr. Beck and I identified three distinct types of transmission of misinformation within the interpretive field: (1) the interpreter simply does not know the facts or understands them inaccurately; (2) the interpreter, with innocence and good intentions, repeats a widespread fallacy; and (3) the interpreter knowingly presents misinformation without remorse because of its instrumental value. While these forms vary in quality and culpability, all of them can damage our personal and collective credibility and limit the long term effectiveness of our messages.

Is interpretation a profession that is particularly vulnerable to these types of fallacies, or is it no different from any other field? Personally, I think interpretation may have a particular susceptibility to problems such as these. In fact, I believe there are two principal reasons for this special vulnerability: (1) the great zeal that interpreters have for changing visitors' attitudes and (2) the willingness to pass along informally obtained information without criticism.

We interpreters are eager to affect change. In the Cable and Brack (1985) article, Holtz (1976) is quoted as reporting that 99% of nature center directors hoped to change the environmental attitudes of the public. One item from a more recent study of individual interpreters asked the question "Do you believe that one role of an interpreter is to challenge the participant's existing belief systems so changes can occur?"; 82.1% of the respondents said "yes" (Zuefle 1994, p. 72). This is what my friend was concerned about in the May apple anecdote, rather than "just communicating factual information" as Tilden might have said. Fair enough. But there is nothing spoken against Tilden's principles in saying that *when* facts are utilized to make a greater point, they should be accurate.

Fallacies like the "gospel" of Chief Seattle are good examples of the second reason for an overabundance of misinformation. I still have my well-worn copy of Chief Seattle's speech. It was given to me in a packet of training and resource information at an outdoor education center I once worked at. Only several years later did I learn the true and curious nature of its origins. Good prose, but hardly authentic in its received form. Interpreters and interpretive agencies are far too eager to pass on useful stories, trivia, or techniques; and we are far too reluctant to question their origins or validity. This is not a call to abandon our traditional forms of professional communications, only a call to tighten them up. I have always enjoyed the sense of sharing and *esprit* that comes with being a part of the interpretive community, and the new things that I learn as a result of this environment. I enjoy the respect given to the tradition of orality, and to the importance of storytelling. I hope these good things are never diminished in our field. But interpreters must be challenged to learn new ways to question within a spirit of cooperation, while maintaining the good things that make our profession unique and worthwhile.

None of this is to say that it is an unpardonable sin to err factually as an interpreter; nor is it to say that the average interpreter is incompetent. Furthermore, it is certainly not to say that I do not commit factual errors—I am guilty! We can all deal with our errors honestly, and in doing so further gain the trust of our visitors. The point here, of course, is not about making mistakes *per se*, but about our collective unwillingness as a profession to challenge ourselves and each other in the ways that other disciplines and professional fields do. I am afraid that too much of our professional discourse is confined to exercises of mass congratulation.

If we do not overcome our unwillingness to engage in critical self-examination, then we invite more intense external examination, and become increasingly vulnerable to its scrutiny. Additionally, we risk losing precious credibility with every unabashed error and uncorrected fallacy. The sacrifice of accuracy of information in exchange for persuasive power is a bad one, as we stand to lose both in the process. Leftridge (1993) admonished: "We must remain assiduous, for the messages we communicate through our actions affect the image our publics engender." Indeed, we should work above all to engender an image of credibility; for without credibility, all of our messages are moot.

Recommendations and Conclusions

Dr. Beck and I previously offered two clear recommendations that we believe are necessary to reduce fallacious information in our field and improve our collective and continuing credibility. They are worth repeating here.

1. Interpreters must work even more diligently to ensure personal competency. Although most interpreters are knowledgeable and competent professionals, we believe all interpreters can benefit from a renewed commitment to attend professional workshops, read more, hone their research skills, and engage opportunities for continuing professional development.

2. The interpretive profession must evolve as an institution to provide an environment for responsible, considerate, professional criticism. While we do not want to adopt the seemingly hostile atmosphere that is present in some disciplines, it is in our collective best interest to expose our ideas to proper scrutiny and debate. We should not be afraid to publicly question and debate the sources and accuracy of shared information. Our profession must maintain its camaraderie and goodwill while graduating into a more mature adulthood of critical thought in our conversations, workshops, and journals.

Lastly, I would like to make a modest proposal. In the classic text *Interpreting the Environment*, Grant Sharpe contributed a chapter entitled "Information duty." In it, Sharpe discussed the task of working in a visitor or welcome center and the duties associated with answering visitors' questions. "Information duty" then referred to a type of assignment an interpreter might be given. In a different sense, I would like to propose that we interpreters have an *information duty*. That is, we have a duty, or professional responsibility, to present factual and researched information: good information. This extremely important duty exists not only to the public, but to our fellow interpreters and allied professionals who rely on us to uphold their credibility as well. I do not believe that many would disagree with this. But the challenge is to accept the duty and raise it from platitude to professional standard. Our credibility, and our future, depend on it.

References and Recommended Readings

Beck, L. 1994. Review of the book *Brother Eagle, Sister Sky: A Message from Chief Seattle. Legacy* 5(5):36-37.

Cable, T., and V. Brack, Jr. 1985. The martin-mosquito myth: interpretive propaganda? *Journal of Interpretation* 10:29-32.

Garrison, N. 1993. Been flamboozled? *Legacy* 4(1):20.

Gleason, H.A., and A. Cronquist. 1963. *Manual of vascular plants of Northeastern United States and adjacent Canada.* Boston: Willard Grant Press.

Hargrove, E. (1989). The gospel of Chief Seattle is a hoax. *Environmental Ethics* 11:195-196.

Holtz, R. 1976. Nature centers, environmental attitudes, and objectives. *Journal of Environmental Education* 7(3):34-37.

Jones, M., and R. Sawhill. 1992. Just too good to be true: Another reason to beware of false eco-prophets. *Newsweek*, May 4, p. 68.

Leftridge, A. 1993. Action vs. myth. *Legacy* 4(1):2.

Lewis, M.W. 1992. *Green delusions: An environmentalist critique of radical environmentalism.* Durham, NC: Duke University Press.

Meredith, J.E., and W.C. Steele. 1993. The truth of Chief Seattle. *Legacy* 4(2):30-31.

Risk, P.H. 1976. The interpretive talk. In: G.W. Sharpe, ed. *Interpreting the Environment.* New York: John Wiley & Sons, Inc.159-176.

Risk, P.H. 1986. The incompetent interpreter: A new university product. *Journal of Interpretation* 11:27-30.

Sharpe, G.W. 1976. *Interpreting the Environment.* New York: John Wiley & Sons, Inc.

Suzuki, D., and P. Knudtson. 1992. *Wisdom of the Elders: Sacred Native Stories of Nature.* New York: Bantam.

Tilden, F. 1977. *Interpreting Our Heritage.* Chapel Hill, NC: The University of North Carolina Press.

Zuefle, D.M. 1994. *The Interface of Religious Beliefs and Environmental Values Within the Interpretive Profession: A Multimethodological Exploratory Study.* Copyrighted doctoral dissertation, Texas A&M University.

Zuefle, D.M., and L. Beck. 1996. Are we ministers of misinformation?: On the need for responsible criticism in interpretation. *Legacy* 7(1):4-6.

LIVING HISTORY: HOBBY OR PROFESSION?

John C.F. Luzader and Jerri Spellman
Living Museums of the West
9609 West Co. Rd. 22 H
Loveland, CO 80538

ABSTRACT: *Reenactments of battles, museum tours, cultural and craft demonstrations, dramatic chautauqua presentations, and historic site displays: "living history" appears to offer nearly everyone an opportunity to participate in our collective past. However, though cultural interpretation and living history are the oldest interpretive methods utilized in the world, there are no recognized standards to classify them as a profession.*

KEYWORDS: *Living history, reenactors, hobbyists.*

Introduction

Cultural interpretation and living history have been with mankind since its beginnings. Dances, cave paintings and pictographic art, restaged sea battles in the Coliseum, Roman conquests being refought in costume for French kings, old campaigners reliving their conflicts on fought over battle grounds, and modern renditions of our past through movies and on site "living history" programs; through all of these our past has been interpreted regularly to receptive audiences all over the world.

Within the past fifty years there has been a great interest in recreating our past through the use of "costumed" personnel. Generally these personnel have been drawn from volunteer organizations and clubs with little or no governing aspect to their training. Craft demonstrations, military balls, dramatic costumed readings, battle reenactments, classroom talks, and on-site programming have all been lumped under the title: "living history" with little regard as to material context or pertinence to the selected audience or site. This confusion has misled the public and professional agencies as to what is "living history" and how it is best demonstrated.

What Is Living History?

Living history is the recreation of specific periods of the past or specific events utilizing living "interpreters" usually clothed and equipped with the correct tools and accouterments of a depicted era. Their representations portray celebrated occurrences as well as daily life of peoples and cultures. In utilizing many resources from archaeological remains, artifacts, personal journals, primary resources, anthropological cultural evaluations, and common sense, "living history" is able to present the closest tactile conception we have of our past.

However, as with any interpretation; poor interpretation is worse than no interpretation. Many interpreters, sites, programs, and agencies believe that putting on "old" clothes and speaking in an "olde" way constitutes living history.

Contrasts

- A grizzled mountain man introduces himself as "Griz" and tells his audience stories of adventure in the American fur trade, all the while wearing colored sunglasses and a cowboy hat.

- A soldier in resplendent dress uniform of the 1880s demonstrates how his rifle is loaded and fired but must refer all military and daily life questions to a park ranger.

- Calamity Jane rides into the crowd, with make-up and hair well coiffured, her pistols ablaze, dismounts and regales the audience with her history and speculations as to possible things she did in her lifetime.

- A school "marm" tells how all schools were taught by women and starts to describe her clothing to the audience, reminding them to ignore her tennis shoes and the fact she has too few undergarments on and how she couldn't find the right cloth for her dress.

- A professional interpreter puts on a wig and some old clothes and "takes on" the persona of an historic figure, earning him a photograph on the cover of a national magazine.

- Robert E. Lee, moments prior to surrendering his troops at Appomattox Court House, allows himself to be interviewed by the press. In his press conference he answers a personal question about his daughters' husbands and is immediately reminded by the press agent that his daughters never married.

All of the above represent "living history" programs that are found in local, state, and national sites and schools. All of the above are poor interpretation, both in interpretive method and historic accuracy. But in the rush to provide living history programs to the public, to schools and institutions, agencies and organizations provide these very types of poorly designed, inadequately researched, inferiorly trained and controlled programs to the public.

This treatment of this interpretive method, whether by local clubs or by professional agencies, is the reason that "living history" is regularly viewed as a hobby and filled with amateurs.

On the other hand, there are many professional living history programs being produced throughout the United States, Canada, and Europe. These programs have a number of items in common in their development and presentation.

- A fur trade fort opens its doors for the public to take part in its daily routine. The odors of wood smoke, horses, sweat, and food all intermingle accosting the senses. Each person has their own job and the importance of each to the fort's function is readily apparent. Clothing and equipment has been well researched and documented. Every visual aspect of the scene is a primary resource within itself.

- After a week's march, the troop of soldiers returns to his post. Cleaning of weapons, clothing and equipment takes most of the men's time. Duty rosters are posted and sergeants bark orders incessantly. A lone private tells the audience of the discomforts of campaigning against Sitting Bull. Close by in an American Indian camp a Crow warrior explains why his tribe is living near the fort and how many of the Crows also campaign against Sitting Bull.

- In the dusty interior of a sod home, a settler's wife invites "folks off the trail" so she might acquire news of back home. She tells how her husband is gone to look for work in town and how she has had to deal with caring for the children, fields and livestock. Dust settles on everything and she complains how she can't seem to keep the house or furniture clean. As she settles into "news" from back East, she tells about her problems and the incessant wind that controls her life. As the audience leaves they almost feel her wanting to come with them.

- A new town is forming on the Front Range of Colorado. Tents are being put up, wooden sidewalks are being laid and shops are being false fronted. Wagons bring in loads of new building materials and supplies for the stores. The bank is open and the audience may exchange its modern monies for town script. The stores and businesses are open for commerce and the public becomes part of the interpretive program. Daily life of a small western town is seen first hand and the immersion is nearly complete.

- In the early morning's light, General Robert E. Lee can be seen near his quarters. There is a bustle of activity as the camp comes to life. As the public and the press comes near, they are stopped by an aide who explains that the General is too busy to speak to anyone but that the aide might be able to assist with any questions. "No, the General has no son's in law, but I am sure he thinks of family regularly." " Could not presume to know the General's thoughts on such a matter but, I feel...." Through the "aide" the audience is able to "see" within the prebattle concerns of Pickett's Charge and the turning point of the American Civil War.

Each of the examples has followed five basic factors in developing and presenting their interpretive programming: theme, historic research, training, believability, and preparing the audience.

Theme. Theme development must be relevant to the site's or agency's needs. In developing the program theme, the interpreter should avoid presenting politically correct and trendy topics. Neither should the interpreter adhere to the adage, "It's always been done this way," or, "It's what the public wants."

Developing the historic theme for the event should keep the following guidelines in mind:

- Ensure you are presenting a theme and not a broad topic
- Be site- or period-specific
- Maintain what is historically correct (HC) for its time, not what is politically correct (PC) for ours
- Represent the whole common picture of the material
- Avoid scripted materials; build a guideline that allows the program to "live"
- Avoid presenting a "mission"
- Interpretive style (first or third person) should be assessed for best site and audience needs
- Strive for believability

With a well-defined interpretive theme, living history programs are better presented and maintained.

Research. Living history programs must be based upon well documented historical research. This should not only encompass primary materials concerning a particular site or date, but all materials that are relevant to the chosen theme. Research is to include evaluations of the historic material, social mores and ethnic backgrounds of the intended "historic character." It involves not only compilation of facts, but also how the facts relate to one another and what is the best method to present the theme to the interpreters and the audience. Research must be maintained on a on-going basis to keep pace with the most recent scholarship and interpretations of the theme's material and proper bibliographies of research materials must be maintained for interpreters' reference.

Training. All interpretive staff members, whether volunteer or paid, must be trained in the most professional manner possible. Training classes should not be limited to historic materials but should also include Tilden's techniques, interpretive planning and TGO (themes/goals/objectives) procedures.

Historic life styles should be taught on an on site basis so that the interpreter knows how it feels to wear the appropriate clothing, do the proper job, eat the correct foods, and behave in an suitable manner based upon their status, ethnic background and age in such a way that their interpretation comes comfortably to them and seems as normal behavior to other interpreters and the audience.

Regular evaluations of the interpreters and the interpretive program should be included and expected in the training to ensure the most accurate and authentic representations possible to the public.

Believability. The interpretive staff, whether paid or volunteer, should be treated in the most professional manner possible. It is the responsibility of the interpreters to be the most believable characters possible for the program. Their sex, age, ethnic backgrounds, weight, accents, clothing, and demeanor should be consistent with what was, not with what we want our past to be. Only in special cases in depicting particular events or persons should the abnormal be portrayed (i.e., women soldiers, men in dress, camel corps, etc.).

Preparing the audience. *If the audience has no idea of the interpretive program's goals and ideals, you have created poor interpretation!* It is unfair to expect the audience to come into the site knowing what living history is and what it is attempting to accomplish. Prepare the audience with advance seminars, interpretive training classes, static displays, videos, fliers and onsite, out-of-costume guides. Do not cheapen the interpretation by ignoring the audience. Whenever possible, allow them to participate in the event with as many hands-on experiences as is possible.

Most importantly, site managers and interpretive specialists must realize that just because an interpreter is paid does not automatically make him/her a professional. Much of our best researched and professional quality living historians are coming from the private volunteer sector. These interpreters are augmenting and in many cases setting the standards for living history excellence in the United States, Canada, and Europe.

It is time for our national, state, and local agencies to initiate better training and professional opportunities to living history interpreters and treat them as professionals.

Living history: hobby or profession? Without the "hobby," there is no profession.

TILDEN'S SIXTH TURNED UPSIDE DOWN, OR HOW TO KEEP THE FUN IN INTERPRETATION

David Weiss and Anna Bates
Park Rangers
Bonneville Lock and Dam
Cascade Locks, OR 97014

ABSTRACT: Tilden's sixth principle states, "Interpretation addressed to children should not be a dilution of the presentation to adults, but should follow a fundamentally different approach. To be at its best it will require a separate program"(Tilden 1982). Children's programs should be active, participatory, and fun. We've found that these same principles make all program better. Whether it's adults or children, all visitors can appreciate a lively, entertaining, and fun interpretive program. If we incorporate the techniques used to make children's programs into all our programs the result will be enjoyable memorable experiences for all.

KEYWORDS: Fun, creative, active, entertaining, memorable.

Why Fun?

Interpretation is a serious business. Professional interpreters have important messages to communicate to the public. They need information, and lots of it. Right? Many visitors say they attend interpretive programs for the education, but lets face it, they're on vacation. Will they even remember the best of lectures? Some research shows that visitors are far more likely to remember the food they ate or the gifts they bought during their park visit than any program or display (Falk and Dierking 1992). Our strategy to make programs memorable is to make those programs fun. Turn Tilden's sixth upside down—children's programs should not be watered-down versions of adult programs, but adult programs can and often should be watered-up versions of children's programs.

Strategies for Making Fun Interpretive Programs

Every interpreter is different and programs that work for one may not work for another. Fortunately there are so many ways to add that extra bit of creativity. No matter what your style, creating entertaining, memorable, programs is within your reach. Children like to be active and involved. Children will not sit long for a lecture, and adults are really not much different. The most important thing to do when planning a program is to make it active. There are many ways to make your programs active, entertaining, and fun. In the following sections, we will share several techniques that we have used effectively.

Body Language

Look at your own body language. Are you actively involved in your presentation? What does your body language reveal? There is a ranger at Bonneville Dam who is so animated with facial expressions and hand gestures that even a simple lecture becomes active and entertaining. We've seen other interpreters who may be very creative and follow good interpretive principles, but their face and body lack any expression. If the interpreter doesn't appear to be having fun, how will the audience have fun? Have fun giving your programs and *show it.* If you have forgotten what it looks like to have fun, go watch a really good interpreter, or better yet, go watch a playground full of children.

Audience Participation

Getting the audience involved is critical to delivering a message that will be remembered. We've probably all heard that people retain 10% of what they hear and 90% of what they do. Audience involvement helps people remember and it's more fun. Getting the audience involved may be as simple as asking questions or leading a discussion. But to make a program fun it should go beyond that. How do you get children involved in a program? Play a game or have them do a simple activity. The same works for adults. Try challenging adults to see how many can stand on one towel to represent increased populations competing for a Limited resource. A game show format for programs is popular with all ages. Anything that brings an audience out of the passive listener mode is good. It is important to consider your audience and plan appropriately; don't play the salmon jumping a ladder game with senior citizens.

The Use Of Props

Props are fun and can be used to make programs more lively and interactive. Props, especially those that can be easily passed around, allow visitors to use more of their senses. There are many different ways props can be incorporated into your program. Use manic tricks, touch bags, artifacts, and biofacts. Generally speaking, the simple props work best. We've seen programs that were so overburdened with props that set up time was a problem and visitors actually seemed scared away from the scene. If you're going to use props be sure they have a specific purpose and reinforce your theme. Watch how other interpreters use props and then copy their examples. Experiment and be creative with your own, you'll have more fun and so will your audience.

Music in Interpretation

Music is another great way to get audiences involved in a fun interpretive experience. Incorporating music seems daunting to many of us because we think we have to be professional musicians. Not true. One of the most memorable programs from a Yosemite trip involved the guide leading us in a simple song with hand motions that helped us understand the structure of a redwood tree. She was no professional singer, but she had a great attitude and got most of the crowd, children and adults to sing along. She wasn't embarrassed about leading a silly song, so we weren't embarrassed about following along. There are ways besides leading sing-a-longs to use music in your programs. Background music for a talk or slide show can be very effective. The right music can really set the mood. Visitors use more of their senses and will be more apt to remember your program.

The Use of Characters

Playing the part of different characters during your program will allow you to meet your suppressed thespian needs and entertain the audience. It is amazing the difference putting on a costume or just another hat can make. Invent characters or research historical figures. Whole books and workshops can be found on the topics of living history and costumed interpretation. If your program is living history it is important to do careful research and be as authentic as possible. This is a case where putting on a costume and winging it is inappropriate. Characters can be invented for other programs. Maybe Mr. Sal Mon is a fisheries biologist come to tell visitors about the spawning habits of the Chinook Salmon, or Annie Angler is a commercial fisherman come to tell her story. Get creative and have fun.

Storytelling

Children and adults love to hear a good story. You don't have to be Garrison Keillor to use stories as a part of your programs. In some cases the story may be the program. It can be a story you've read and learned well enough to tell or it can be a story you have made up yourself. The story may involve audience participation with visitors either acting out part of the story or given lines to say. Maybe you will act out the story. This kind of storytelling takes lots of practice. Many of you are already using another kind of story in your program, the anecdote. Anecdotes are wonderful ways to make your programs more personal. They can be funny stories about other programs or events that have happened at your site. They can be stories told to you by other visitors. Try getting participants of your program to tell their own personal stories. A ranger we know amuses visitors with interesting little stories he has picked up along the way. Remember that anecdotes, if used as a part of your interpretive program, should have a point and relate to your theme. When used appropriately stories can draw all ages in and engage everyone's imagination. They are an excellent tool to make your programs more fun and memorable.

Conclusion

We all want to give interpretive programs that our audience will remember. We have important messages to share about our special areas. Next time you're planning that perfect program that will leave visitors with good feelings and a message they'll remember, try taking Tilden's sixth and turning it upside down. Make a children's program for adults. Use activities and games, props and characters, lead a song, or just tell a good story. If its fun they will remember. Most important of all have fun yourself, like the hokey pokey, that's what it's all about.

References

Falk, John H., and Lynn D. Dierking. 1992. *The Museum Experience.* Washington, D.C.: Whalesback Books.

Tilden, Freeman. 1982. *Interpreting Our Heritage.* Chapel Hill: The University of North Carolina Press.

TRAINING TECHNIQUES TO AVOID MISCOMMUNICATION AT THE FRONT DESK

Lenore Heppler, Resource Interpretive Specialist
Bureau of Land Management
1150 University Avenue
Fairbanks, AK 99709

ABSTRACT: *Information desk staff help visitors make decisions about recreation. When a staff person makes assumptions about the visitor, miscommunication can happen. This presentation demonstrates training sessions to help staff recognize and avoid making assumptions.*

KEYWORDS: *Training, information desk, recreation information.*

It's an Easy Job

A friend of mine once said, "Oh, you have an easy job. All you do is stand around and talk to tourists all day." I had a hard time articulating my objections. On one hand, he's right—I do stand around and talk to tourists (or visitors) all day. On the other hand he's wrong—it's not easy. Or at least it is not easy to do well.

While trying to defend my profession, I noted an example. A visitor comes to the information desk and asks about driving the Dalton Highway from Fairbanks, Alaska, north to the Arctic Ocean, a 1,000-mile round-trip drive on a remote gravel road which has heavy truck traffic. My friend has been up this road many times in his work and his reply to this question was, "Tell them not to do it. Why would anyone want to drive that road?" Many reasons from our visitor came to mind—for the adventure, to be able to tell their friends that they have driven above the Arctic Circle, to access remote hiking areas, to see the Arctic tundra, to see the 800-mile oil pipeline which parallels the road, to have a chance to see caribou, musk oxen and rare birds, to step out of your tent at 1:00 a.m. and see the sun in the sky, to go to a place few have gone, to see the beauty of the Brooks Range, to travel where their great-uncle spent several years searching for gold—there are hundreds of reasons.

Then I realized that he was making some of the same mistakes that I and others in the profession make. We have made assumptions about the visitor.

We naturally make assumptions. After eleven visitors with a certain characteristic come into your center and ask the same question, we assume that the next with that characteristic has the same question. Assumptions sometimes help. They can speed the exchange of information. But they only help if we have made accurate assumptions. It is difficult to know if we are making accurate assumptions. Indeed, information staff get into trouble when they make inaccurate assumptions about visitors and don't realize it. The result could be a visitor who walks out of the visitor center feeling that the staff did not help him/her. Unfortunately, the staff often doesn't realize this and may feel that they have given the visitor the information he/she needs. The assumptions seem to fall into three categories:

- Assuming we know what factors the visitor considers when making decisions; often these assumptions are based on appearances.
- Assuming that the visitor defines relative terms the same way we do.
- Assuming that the visitor has an accurate understanding of the conditions in the area and his/her own abilities.

But how do we help new interpreters recognize the assumptions that we all naturally make? How do we give them the tools to avoid making these assumptions? I tried to prepare lesson plans so that at the end, the participant sits up, says "aha!" and comes to the conclusion that is the main message of the lesson, and more importantly, remember this when they are working the information desk.

This presentation will be a demonstration of these lessons. Below is an overview of each lesson. Full lesson plans are available by contacting the author.

Lesson 1: Why Do Visitors Make the Choices They Do?
Visitors often ask, "I have X amount of time here. What should I do?"

Main message. Visitors make choices based on myriad factors. We cannot know these factors so we should not make choices for them. Rather, we should provide factual information so that they can make an informed decision.

Objectives. At the end of the lesson, the participant will be able to list five factors that visitors consider when making decisions about recreation.

Materials needed. Two flip charts and pens, set up on opposite sides of the room. One says "Go" on it, the other says "No."

Procedure.

- Have everyone stand in the middle of the room.

- Provide participants with a scenario which will have them make a choice on whether to take a hypothetical recreational trip. For this presentation, the participants are offered an all-expenses-paid trip for two to Alaska. Ask participants "*Considering your present circumstances*, will you go on this trip?" Those who will go stand by the "Go" chart, those who won't, stand by the "No" chart.

- Ask them: what are your reasons for making this decision and have volunteers write these reasons on the flip chart.

- Alter the scenario slightly so that people are moving back and forth and numerous reasons are listed on the flip charts. Remind them that they must make their decision based on their present circumstances. Examples: You have to go for three weeks, no more, no less. the trip must be taken in January. The offer is only for one person.

- Some reasons for the decisions that might come up on the "No" side are time constraints, money constraints, family obligations, timing, etc. Some that might come up on the "Go" side are to explore, see a place they've never seen, to visit friends or to see the *aurora borealis*.

- After several rounds, discuss the reasons and how we cannot know the reasons people make decisions so we should avoid making decisions for people. Discuss ways to avoid making decisions. Strive to present unbiased, factual information to visitors and let them make decisions.

Lesson 2: If Only We Could Read Their Minds!
Miscommunication can occur when we make assumptions based on the visitor's appearance. We assume a certain skill level based on the way the visitor looks or we assume they like to do certain things and dislike others.

Main message of the lesson. Don't make assumptions about visitors based on their appearance.

Objectives. Participants will be able to list three types of assumptions that we make at the information desk.

Materials needed. Two slide projectors, two screens.

Procedure. This lesson requires a great deal of preparation time. Several short skits are prepared which show interactions between visitors and information desk staff. Behind each of these players is a projection screen which shows a slide of their thoughts. The scenarios are slightly exaggerated and show some miscommunication on the part of the visitor as well. In the first scenario, an older woman comes to the desk and asks about trails. The staff person assumes that because the woman is older, she wants information about short, flat trails while the woman is actually looking for long, wilderness treks.

The script. *(Descriptions of slides to be projected behind each player are in italics and in parenthesis.)* (Stage directions are in parenthesis.)

Staff: *(Shot of staff person on a beach somewhere.)* (Daydreaming about vacation.)

Visitor: (Walks in.)

Staff: (Sees visitor.) *(Cruise ship.)* Good morning, can I help you with anything?

Visitor: *(Shot of the visitor on a backpacking trip.)* Yes, I'd like some information about hiking.

Staff: *(Bike path through town.)* Oh, there's plenty of trails right downtown. The bike trail follows the river to Alaskaland. It's a paved, flat trail that is about one mile long.

Visitor: *(Backpackers.)* We're looking for something a little more rugged.

Staff: *(Nature trail.)* Creamer's Nature Path is a nice, level, short trail and it's only a couple of miles from here. Be careful though, there's probably some muddy sections and the mosquitoes are pretty bad.

Visitor: *(Group of hikers.)* We want to get out of town more.

Staff: *(Angel Rocks trail.)* Well, there's also a nice trail out Chena Hot Springs Road called Angel Rocks Trail. It's three and a half miles long though and it has pretty steep sections. It can be pretty difficult.

Visitor: *(Mountaineer.)* (Getting offended.) We're really looking for something more remote. We have about five days.

Staff: *(Rangers rescuing the woman.)* The only other trails in this area that are longer have steep climbs and are pretty rugged.

Visitor: (Annoyed.) *(Visitor strangling the staff person.)* Last year we hiked the Chilkoot Trail and this year we're looking for something less crowded and more remote.

Staff: *(Dialog bubble which says "OOOPS!!")*

Discussion

What errors did the staff person make. How could she have assessed the visitor better?

Other skits include a situation where the staff person makes an assumption based on past experience at the desk and one where the staff person gives a young man information about recreation possibilities without realizing the man has two young children so that the visitor believes that the area will not be fun for his family.

Lesson 3: What's Good to You May Be Bad to Me

Some words and phrases are relative—words like *beautiful, good, crowded, cold, easy,* and *hard.* They mean different things to different people. I've heard people describe the Dalton Highway as anything from "It's terrible, they ought to close that road" to "It's in great shape, best gravel road in Alaska." We need to be aware of this relativity when listening to questions and when forming replies. In some instances, a misinterpretation of a relative term can mean frustration (what you consider to be crowded). In some instances, a misinterpretation of a relative term could put people into life-threatening situations. This can be especially true when assisting a visitor who wants to have a backcountry experience. One way to deal with this is to use words that are more factual and less relative.

Main message of the lesson. Avoid using relative terms when giving information. Give factual information.

Objectives. At the end of the session, staff will be able to:

- Given a list of 10 sentences, correctly identify those that contain relative terms or phrases.

- Write factual descriptions of a trail, a river, a road, and their area.

Materials needed. Worksheet with the following types of questions/directions: name an easy trail, name a difficult trail, name a beautiful place, name a canoeing river that is easy, name a canoeing river that is difficult, name a real wilderness area of the state, describe condition of the roads in your area, describe value of visiting your area.

Procedure. Pass out the work sheets and have the staff fill them out. Discuss the answers. In most groups, someone will list a trail or river as easy where another person would not. What is easy to a person with experience and who is in good shape may be difficult to a novice or someone who is not in good shape. How can we answer these questions without using relative terms? Use factual information. For trails, describe the length, grade, and hazards. For the "Is it worth it to go to...?" questions, describe the area factually. Have the participants write a factual description of their area, a trail or some other feature and discuss. Another technique is to find out how the visitor defines relative terms. When someone asks if the Dalton Highway is in good shape, I can ask them what roads they have been on and make comparisons. If they thought the Alaska Highway was in bad shape, they probably will think the Dalton Highway is terrible.

Lesson 4: Are You Ready for This?

We need to be very careful not to assume that the visitor has an accurate assessment of their own skills and an accurate assessment of the conditions they will face in our area. This is particularly important when a visitor is heading to the back country, indeed it could be a life-threatening situation. For example, I once had a visitor come in who wanted to hike from Circle to the Dalton Highway, which would require crossing the Yukon River and hundreds of lakes, if you could find enough land to even hike on. He did not have a good idea of the conditions for this proposed trip.

We've also had visitors come in who think that hiking in some of the more populated park area prepares them for a back country trip in the Arctic. Their experience might be on well-maintained trails that receive a great deal of use. In case of an emergency, help is easily available and nearby. In many areas cell phone can be used to call help. In the Arctic there are no trails, cell phones don't work and help may be days and hundreds of miles away. One is truly on their own in the Arctic.

The key to making an accurate assessment of the visitor's skill levels and their knowledge of area conditions is in listening and questioning. Often, when listening to a visitor, you find that they say something that just isn't right, something that makes you think they may not be assessing themselves or the area correctly. I call these red flag situations. When you hear a red flag, it is time to question the visitor further or supply them with information they need to get an accurate idea of what the area is like.

Main message of the lesson. Don't assume that the visitor has an accurate self-assessment that is based on the conditions they will face in your area.

Objectives. Given a list of hypothetical visitor comments, participants will identify those that signal the need for more information and more questions and list what questions they could ask to avoid miscommunication.

Materials. A small red flag for each participant.

Procedure. Two people act out an exchange at the information desk, one as a visitor, the other as a staff person. Every time the visitor makes a comment which shows that they do not have an accurate assessment of their skills as they relate to the area, the participants wave their red flags and give the staff person suggestions on what they should tell the visitor or what questions they need to ask. Examples of statements that should solicit a red flag include the following: Where are the trails on this map (in an area with no trails)? Do I need a map? I don't need a tent. Are bears a problem? Should I carry a gun? I'm travelling alone.

Conclusion

Even though I fumbled for a reply to my friend's statement about how working the information desk is easy, it helped me think about my profession and how to be more professional at it. I tried to show him the assumptions he was making and gave him examples of how to answer that question without making assumptions. I hope he gained a new appreciation for our work. More importantly, it helped me focus on the lessons I had learned at the information desk and the need to help new staff communicate better. It looks easy, but to be done well requires thought and care. Training can help your staff answer questions not only easily, but in a way that truly helps the visitor make informed decisions about recreation activities.

WHAT HAVE YOU DONE FOR YOUR CAREER LATELY? CAREER DEVELOPMENT FOR INTERPRETERS

Broc Stenman, Department Training Officer
California Department of Parks and Recreation
William Penn Mott Jr. Training Center
Pacific Grove, CA 93950

ABSTRACT: *Career opportunities in interpretation appear to be fewer and farther between than ever before. Is this really the case? This presentation examines pointers for deriving greater rewards and satisfaction from a career in interpretation. The session explores personal development from the standpoint of lifelong learning and of enhancing the meaning and value of your work.*

KEYWORDS: *Career development, lifelong learning, personal growth, organizations.*

Introduction

How satisfied are you with your work life? What are you doing presently to make your work more satisfying and your career more rewarding? Even if your present job satisfaction is high and you feel that you've got your career under control, this session is for you. It is this presenter's belief that there is room for improving even what appears to be the most perfect career in the (nearly) perfect profession of interpretation. Whether you are just starting your career or well along a career path, there are things you can do to make your aspirations a reality. The objectives of this session include (1) examining careers and career development in the interpretive profession and (2) discussing ideas for individual development.

The Changing World of Organizations

The world of work is changing and no less so in the interpretive profession. Downsizing, right-sizing, or reinvention has touched almost all workers in one fashion or another. Over the last several years, governmental and nongovernmental organizations have been faced with significant issues of change and survival. These issues are expected to be the norm for the future rather than a return to the relative security of times past. How we prepare ourselves to do our jobs, and how we define and plan for our careers, are important determinants of how rewarding our work and personal lives will be today and in the future. Ultimately, these same issues will affect the profession to which many interpreters have devoted their careers. Despite the enormity of the change around us in society and places of work, we still possess the ability to shape our individual work lives in most important respects.

Career Patterns in Interpretation

For the most part interpreters have selected their profession for reasons other than high salaries or abundance of promotional opportunities. Even large agencies with many permanent employees have relatively few staff specialist, supervisory, or managerial positions with solely interpretive responsibilities. Promotional opportunities are relatively rare and competition for promotional positions can be intense. Furthermore, the interpretive profession attracts many individuals who purposefully chose not to seek promotional advancement. Many men and women are in this line of work for the rewards of direct contact with both the public and the resource and have little interest in a "desk job." In addition to these considerations is the fact that there is little career movement across organizational lines once one's career track is established, especially in state and local agencies. Career planning has equal applicability to those seeking promotion as it does for those whose greatest job satisfaction is that of a field interpreter or staff specialist.

Career Development: Individuals and Organizations

There are implications of the foregoing that bear directly on career development plans of both individuals and their organizations. Individuals looking ahead to a lifelong career in the field of interpretation need to assess their long range career goals for a host of issues including promotions, transferability, job security, and individual development. Individuals seeking to progress up or through the organizational ladder need to identify and develop the knowledge, skills, and abilities that will make them competitive in examination and interview processes. Equipping one's self for a possible dislocation or voluntary mid-life career change is increasingly an important reason to develop "career resiliency." For those individuals who stay in one position or at one level for an extended period, individual development is necessary to stay at the top of a person's professional competency and job satisfaction.

From an agency's standpoint, paying attention to individual career development takes on even more importance in times of organizational turbulence and focus on "the bottom line." More and more there is a direct correlation between employee productivity and the training and development invested in employees. Whereas in times past agencies often looked at cutting training first, the shortsightedness of this approach has become apparent to many, if not most, decision makers. Human resources offices are seeking out new and better ways to strengthen the linkage between organizational inputs (e.g., training and development activities) and outcomes (e.g., improved client satisfaction). "Succession planning" that prepares the next generation of journey-level interpreters and managers will become increasingly important in the future world of organizations.

Individual Assessment

In order to come up with a realistic and doable plan for your development you will first need to conduct an honest assessment of where you are presently and where you want to be within the next two to five years.

The California Department of Parks and Recreation uses a four step process which includes examining the following:

1. Yourself: Sit back and look at yourself, at what you are now, and where you are now. Look closely at your values, your personal interests, your skills and abilities. Then look at your present job, and what it demands of you by way of performance requirements. If you find that you need additional training or experience to be more proficient, in your present job, that you and your job are mismatched, or if you are interested in moving on to other things, you are ready to ask yourself the following questions, and *write down your answers:*

- *Of the things I want to do, which do I now do well?* Make a list, then rank each item in order of priority, that is, the most important to you.

- *Of the things I want to do, which do I do poorly?* Make another list, again ranking your entries according to how much weight you give each one.

- *What do I need to learn if I am ever to do the things I want?* In what period of time—and how—can you acquire the knowledge, proficiency, or strategy that will take you in the direction that is right for you? What is the most profitable investment of your efforts? Reading? A degree? What task or assignments should you learn to do? Which people should you get to know better? Be sure that you invest your time in acquiring knowledge or skills that relate to the high-priority items on your "do-well" and "do-poorly" lists. Also, you may have certain abilities, such as the ability to speak well in public, that you could sharpen by a few hours practice each month. You have to ask yourself whether improving an already developed skill is worth your investment of time. You might find it more rewarding to use those same few hours in, for example, reviewing and practicing your writing skills so that you can acquire a proficiency in publications that you do not have now.

- *What resources can I tap to help me reach what I want?* Talents? Skills? Education? Money? Counsel from a friend, expert, or co-worker? Support from significant people, including family members? Summed up, who can help me? What would contribute? Who or what is available in the time you have available?

- *What should I start doing that I am not now doing if I am to get what I want?* A program of study designed to help you achieve your goal may be a possibility. Can you start it soon? If not, when can you start it? Or maybe some tactical maneuvers are called for. What are they? Are they realistic at the moment? If not, who could help make them a possibility?

- *What should I stop doing?* If you are spending too much time on activities which are low on your "do-poorly" list, why bother? Then, too, most of us decide when we are young what we want out of life and out of our careers. Some of these aspirations linger on, even though they ought to be adjusted to reflect reality. Replace a goal you know you cannot reach with one you know you can. That way, you stop wasting time in courting frustration. You discover new satisfactions you never realized were available, and by answering all questions thoughtfully and honestly but adventurously, you have also taken the first step in writing a career strategy for yourself.

2. Your Goal: You have now established what and where you are and, if you have read this far, you are apparently not too satisfied. Where and what you want to be must be determined. Think about that in terms of from two to five years, and consider *your goal statement.* Once you have given your goal some tentative thought, it is time to put it down in writing. Remember, "realistic" is a key word.

If you were honest with yourself in Step 1, you probably recognized that, in addition to your strengths, you might have some weaknesses, too, or shortcomings. It is these shortcomings or weaknesses that might block you from reaching your goal, unless you do something about them. And what that something might be is really up to you to determine and to take care of. But that something (or some things) leads you to the next step, where you will probably need help.

3. Your Objectives: We said you will probably need some help, so now is the time to get your supervisor involved. There is going to have to be an agreement on the way you are going to reach your goal, and you are going to have to know how much support you can depend on. After all, what are those shortcomings? Lack of education? Lack of varied experience? And how do you overcome them? Training? College courses? Training assignments? Transfers? Step 3 requires action on your part, your supervisor's part, and on the part of others.

This action is based on reality and, unless you want to waste your time and effort, be practical and base your action on sound information. Your supervisor and others can help you get that information, but you will have to let them know you want it, and you have to be willing to do some legwork yourself. The actions you have to take in order to achieve your goal are very important to your success. These actions are called development objectives, and you should identify and prepare for them in priority order (first things first).

"Development objectives. Listed in rank order and in specific, measurable terms, the steps and methods by which I plan to reach my goal include: . . ."

When you begin to write your objective statements, you should write them so that they are:

- Specific. Each statement should identify a particular activity to be accomplished.

- Individual. Each statement should be directly traceable to your efforts.

- Measurable. Each statement should show by when, how much or many, where, etc.

- Realistic. Each statement should be based on research, knowledge, and analysis--not hope.

Like any properly written document, they should be clear and concise.

4. Your Plan: You should soon be ready to sit down with your supervisor and, together, write your "career development plan" in final draft form. At this point, it is important to realize that, while each person should do their own preliminary planning, no one should formulate a plan alone. Review your plan every six months to assess progress and identify obstacles and accomplishments. Make this a routine part of your personal appraisal.

Ideas for Individual Development

During the presentation at the 1996 NAI National Workshop, I will discuss and explore in greater depth than is possible here the following considerations for individual development:

- Updating and improving your resume
- Career counseling with your supervisor and peers
- Taking advantage of mentoring
- Getting the most out of training and conferences
- Continuing your formal education
- Practicing Stephen Covey's "sharpening the saw"
- Self study
- Reading
- Capitalizing on optimism and enthusiasm
- Using technology to your advantage
- Networking
- Becoming savvy about organizational life and politics
- Getting the most of performance evaluation
- Keeping current in your field
- Managing your boss
- Reconsidering your role as leader and follower
- Finding career development resources

Conclusion

The new reality of work life is that each of us must commit to be our own masters of continuing change. More than ever before, we must pay attention to what's going on around us. We must be diligent "naturalists" in comprehending the forces at play in the world of work no less than the world of nature and cultural history. Interpreters should continually reassess their careers, plan new goals and directions that allow greater flexibility and independence from the perils of organizational life. Learning, working, and recreating are the wellsprings of our lives and our profession.

References Cited

Bolles, R.N. 1978. *The Three Boxes of Life.* Berkeley, CA: Ten Speed Press.

Covey, S.R. 1989. *The Seven Habits of Highly Effective People.* New York, NY: Simon and Schuster.

California Department of Parks and Recreation. *Department Administrative Manual,* Chapter 3, Training and Development.

Watchable Wildlife

The wild things of this earth are not ours to do with as we please. They have been given to us in trust, and we must account for them to the generations which will come after us and audit our accounts.

—*William T. Hornaday*

DRIVING TOURS: LISTENABLE WILDLIFE

Peter B. Lewis
President, AUDISEE Sound & Music
1011 Western Ave., Ste. 506
Seattle, WA 98104

Laura Reeves
Owner, Clyde Communications
18129 19th Dr. SE
Bothell, WA 98012

***ABSTRACT**: An audio driving tour is a personal, intimate form of interpretation. It is fun for visitors, relatively uncomplicated and cost-effective to produce, and can yield a reasonable income. Using the power of interpretive audio, travelers acquire the tools to appreciate all kinds of wildlife from the comfort of their own vehicles.*

***KEYWORDS**: Audio, driving tours, sound, wildlife.*

Introduction: What Is a Driving Tour?

A driving tour, as we will be discussing it, is a recorded presentation played over the car stereo system in a visitor's vehicle. It is timed and designed around a given road or route through a specific park, historic area, forest, or monument.

Driving tours offer a different approach to interpretation than other, more traditional media. We can all agree that the most effective and desired form of interpretation is direct interaction between naturalists and visitors. Unfortunately, budget restraints make this type of direct contact with every visitor impractical. Driving tours can be an interpreter's best friend by delivering in an exciting manner valuable information about your area in a cost-effective yet still personal, even intimate format.

Audio is the emotional medium. Long before the written word was established, people told their stories in a lasting oral tradition. They bragged about their triumphs, taught their children, described the wonders they had seen and the emotions they felt. They did this with only the tenor of their voices and the sounds they could create with the objects at hand. Music—singing, drumming, the whistle of reeds—was gradually developed as a way to enhance the art of storytelling.

Driving tours take this oral tradition and turn it to your benefit by including stories, music, interviews, and the sounds of your park's unique flora and fauna. How often do your visitors actually see your most exciting animals? Not often, if you're like most areas. For example, on the tour we did for the Mount St. Helens National Volcanic Monument we were fortunate to record the bugling of Roosevelt Elk on their own turf during mating season. Few if any visitors would ever have the opportunity to listen to this thrilling sound while driving down the road, or even hiking the trails. However, we were able to bring this critical element of the park's environment to them any day of the week, any time of the year.

Audio cassette driving tours also offer two distinct advantages over signage and printed materials. Of course, it is ideal for visually-impaired visitors—it caters directly to the ear and the imagination. And, it enables the driver of the vehicle to fully appreciate the interpretive story without awkwardly juggling books or missing roadside signs. Second, a driving tour allows interpreters to communicate their philosophies and specific concerns as a subtle backdrop to the entire presentation. Much as naturalists can do, driving tours weave concepts such as stewardship of the land, conservation, driving safety, history and other sciences into the overall interpretive script.

Philosophy: Why Produce a Driving Tour?

When we produced the Mount St. Helens driving tour, we asked the folks there what their reason was for using this particular medium. Their interpretive specialist at the time, Celese Brune, said, "At Mount St. Helens, we consider interpretation a creative process. We didn't want numbers and mile markers, we wanted concepts. People are most interested in people. To touch the listeners, we went to the people who were there."

Audio interpretation of natural events, like the 1980 eruption of Mount St. Helens, offers the impact of involving another sense in the learning process. Good sound design on a driving tour allows eyewitnesses and other concerned individuals to speak in their own voices. With the use of sound effects and on-site recordings, an authentic presentation can be created with sound. The recreated sounds of ancient native tribes and authentic sounds of birds chirping can add greatly to what the visitor sees. Sound effects bring the environment into the car. Sounds of historical events bring those events to life.

Driving tours add to visitors' emotional and sensory involvement in their surroundings, but they also advance the participating agencies' goals. People who have used audio interpretation report that the tours made their trip more enjoyable and enabled them to get the most out of their vacation. Happy campers mean return visitors and positive referrals.

It is critical in this day and age to make presentations interesting and keep people's attention. National Park Service officials say the use of audio driving tours "appears to be a viable supplement to personal services programs offered by National Park Service interpretive rangers." As the number of visitors to national parks continues to increase, and the number of interpretive specialists dwindles, self-contained, visitor-activated interpretive information will become more and more necessary.

Technical: How Are Driving Tours Created?

Identify and evaluate. The first step in creating an exciting, informative, "interpretainment" driving tour is to identify and evaluate the route to be interpreted. The important thing at this point is to establish criteria for a successful driving tour and then answer them completely. Some of the most important criteria for determining the success of a driving tour along a specific route are as follows.

1. Are there entry and exit portals to use as distribution points? These would include visitors centers, staffed information booths, gift shops and other locations tied directly to the supervising agency. Barring these types of natural sales points, public-private partnerships with gas stations, hotels, restaurants and other primary stopping spots for visitors can be successfully created.

2. Is the travel on the route significant enough for a driving tour to be cost-effective? This particular question requires a great deal of thought. Do you have accurate information about the number of people who travel the road? If not, can a study be commissioned and conducted at little or no cost, perhaps by tying in with a local university? With this research in hand, you can begin to evaluate the percentages which might buy the tape, a price point for the tape and whether those numbers will give you a break even point in a reasonable amount of time. We will discuss this further a little later in the presentation.

3. Are there areas of major historic, natural, geographic, or other significance along the route? If it's just a pretty drive, people will have less reason to purchase the driving tour. The more significant areas lending themselves to interpretation along the way, the better chance people will be curious enough to pick up the tape.

Outline content. Once you have chosen the route and determined that it lends itself to successful interpretation via a driving tour, you'll want to create an outline for the content of the program. Drive the route with this in mind, using a stopwatch and mile markers, and select significant elements of the story and place them in a timeline. At this point we generally develop each segment of the production and create what's called a storyboard for them. As we do this, we consider all of the information and material we want to present and when it should be introduced in the program. Obviously each major element, a river or lake or glacier or animal habitat needs to be noted at the point in time the traveler would be passing it. Other, more editorial comments such as conservation issues and stewardship, need to be woven into the whole story.

If you have acquired corporate sponsors, they need to be acknowledged, particularly if they include private timber companies or land owners. For example, in the Mount St. Helens tape, Weyerhauser was a major contributor to the tour and we were able to interview their people in regards to the forest management techniques that had been applied after the volcano's eruption and how the forest ecosystem was recovering as a result.

The tour needs to include as much human element as possible. Interviews with long-time residents, veteran naturalists and rangers from the park or agency, etc. These specialists have the stories and the information people are interested in hearing. It also is important along the way to offer a diversity of voices on the recording. As the content is being developed, take into consideration who will be speaking. The choice of narrator is very important to the success of the project. Don't skimp on this element. A bad voice talent or actor will ruin an otherwise wonderful production. The storytellers also should be real people or good actors.

Finally, do your research. Know all that you can know about the route to be interpreted. Good research will help the script write itself.

Select sound effects and music. To produce a driving tour which is highly interpretive but not entertaining or engaging is a waste of time. We focus on creating a package that rewards the listener every step of the way with sound effects and music which are of the highest quality available. In some cases sound effects will need to be recorded on-site, and it is possible that original music, although more expensive, may be called for in certain situations. Most of the time pre-recorded sound effects and library music will be acceptable choices for the production. Since library music costs about $100 per song and original scores can range more than $1,000 each, budget will likely dictate a very judicious use of new music.

"Listenable wildlife" implies just that. It means finding the unique or signature animals along the route and recording them in their natural surroundings. Although this can be more costly and time-consuming, it is critical to portray the excitement and special qualities of your site. The vision you create with the sounds of these animals is one of the listener's rewards. It makes the production intriguing and different. The selection, use and layering of these sound effects, both live-recordings and stock tape, are critical to making the images along the tour route come to life.

When the tour is ready for completion, it should be produced to a stopwatch, played while driving on the road and beta-tested for three crucial elements:

1. Communication—does it keep the audience awake and interested?

2. Timing—does it loosely hit the mile markers?

3. Interpretainment—is it something the audience would listen to away from the road, is it "edutainment?"

Business: How Much Does It Cost? Can It Make Money?

Driving tours do cost money, although they offer the opportunity to make money as well. As with any project, how much you put into it is directly proportional to how much you get out of it. Marketing a product properly is absolutely essential and could be a topic all in itself. We'll offer a few tips and ideas to get you started.

To answer the $60 million question up front, no it doesn't cost a million bucks. We have calculated most driving tours at approximately $1,000 per minute of potential cost. Therefore, a 50-minute driving tour could cost in the neighborhood of $50,000. Now, remember, we said potential cost. The Mount St. Helens tape, a 50-minute production, actually cost the sponsoring agency less than $20,000. This is the result of in-kind services, script-writing provided by their naturalist and so on.

Consider even the full potential cost of a one-hour driving tour—$60,000. This cost can easily be amortized over a five- or even 10-year period of use. Using some basic numbers, let's break that down. Assume this road is traveled by 500,000 vehicles per year. And let's say our hypothetical road is accessed only at the north and south ends, both of which have visitors centers. Now let's make an educated guess that 50 percent of the travelers stop at these visitors centers before traveling the road. With good packaging, display and visibility of the driving tour, let's estimate that 2 percent of the 250,000 vehicles which stop have occupants who purchase the product. That would be 5,000 people per year purchasing your driving tour. At a price point of, say, $10, a nice round figure, you would nearly pay for the production, although not packaging and marketing, in the first year. Even taking into consideration repeat visitors and the costs of packaging and marketing the tape, it is safe to say that under this scenario, your initial investment would break even and begin to make money the second year. This leaves three to eight years of largely free income for our hypothetical site. Granted, it certainly isn't enough to pay off the national debt, but it is money coming in when there is little enough of that going around.

Marketing your driving tour, as mentioned, could be a topic in and of itself. Of course budget is always a consideration, but we have found that packaging the tour in a colorful wrapper and displaying it prominently near a point of purchase are most effective. Also, the packaging should be larger than the cassette itself. A cassette-sized package often gets lost among all the other paraphernalia for sale at most gift shops, etc. Placing the driving tour for sale in outdoor catalogs, nearby gas stations and hotels, and through AAA also increase your chances of distributing them to a large number of your visitors. After spending time and money on the creation of a driving tour, it is obvious you want as many travelers as possible to use it. In order for visitors to purchase the tour, they must know it exists. Your job is to get the word out in as many creative ways as you can devise.

Obviously, what we've just discussed is an oversimplified case study. But it does give you a basis from which to evaluate the possibilities of your site for a successful driving tour. It also displays the advantages a driving tour can offer as you try to make fewer personnel stretch to accommodate the interpretive needs of more and more visitors.

Audio really is the emotional medium. An audio driving tour is a personal, intimate form of interpretation. It is fun for visitors, relatively uncomplicated and cost-effective to produce, and can yield a reasonable income. "Listenable wildlife" could be just the ticket for interpreting your scenic byway.

PUT PUPPETS IN YOUR BAG OF TRICKS: THE WATCHABLE WILDLIFE PUPPET QUIZ GAME

Don Pendergrast
Natural Resources Management
University of Alaska Fairbanks
Fairbanks, AK 99775-0200

Summer:
Tetlin National Wildlife Refuge
P.O. Box 779
Tok, AK 99780

***ABSTRACT**: Visitors to Alaska have high expectations of watching wildlife; few have the viewing skills. In this game the visitors become the puppeteers and explain to each other where and when to look for the different characters. This format allows the visitors to participate, and tell their own watchable wildlife stories. The interpreter controls the flow either in character or as the interpreter. Its flexible and fun!*

***KEYWORDS**: Puppets, watchable wildlife, habitat, games, interpretation.*

The Watchable Wildlife Quiz Game

These instructions are for puppets we have at the Tetlin National Wildlife Refuge. In the interest of brevity only two characters are illustrated, a bald eagle and a beaver. You can adapt this to fit your own situation.

Purpose. To get the participants (visitors) to play the roles of animals and use the puppets to answer questions about the animals and their habitats. This provides a forum in which the visitors can respond at various levels, simply answering the questions or becoming more involved by sharing their own knowledge and watchable wildlife experiences. It enables everyone to learn a little about the animals and make them more aware of when and where to look for them.

Materials:

- Puppets
- "Who am I" questions (to assign roles)
- Information cards for each animal
- Habitat posters to identify the various habitats (wetlands, forest, and tundra)
- Creature quiz questions for each animal (to ask of each character)

Players. One central person is the host. This person can take on the character of the dragon fly, a creature who flies from habitat to habitat. The person should be able to slip out of character at times to fill in detail or provide more information when necessary. A way to do this would be to put on an agency hat to indicate a change in character.

The ideal would be one person for each animal, but if there are more than that some will just have to listen, or help out someone with a puppet. Of course the game can be played without using all the characters.

The play. First gather your audience and explain that you are going to play *The Watchable Wildlife Quiz Game*.

Ask Who Am I Questions to assign roles. Sometimes you will get a visitor who does not want to play the role, just let somebody else play it, the game will go better if you have enthusiastic participants.

Give the puppet and the appropriate Information Card to the players.

Introduce the habitats: wetlands, forest, and tundra. This in itself can be a teaching opportunity. Use posters or signs to indicate the separate habitats. Ask the animals to go to their favorite habitat. Some animals, like bears could easily be in any habitat so this may stimulate discussion. Perhaps some people will choose an inappropriate habitat, this too can be good for discussion.

The central person (Moderator, Quiz Show Host, Interpreter, whatever) asks the Creature Questions about the puppet characters which the participants can answer with the help of their Information Cards.

As the question-and-answer portion proceeds, many opportunities for the central person to add to the information will arise. He or she may do so in character or out of character as an Interpreter. However it is done, have fun with it.

Most likely there will not be enough time to finish all the questions for all the animals. Use your judgment as to where to cut off the questions and answers, perhaps each animal character will be asked only one question. Be ready to end the game quickly and summarize by telling the participants where, when, and how to see wildlife on their travels.

Other games could easily be played. Predator and prey relationships could be explored. Fire effects could be explained.

"Who am I?" questions. These questions are ones that should be asked to assign creature roles to the visitors. The person who correctly identifies the creature gets to play the role. The visitor gets the puppet and the wildlife information card for that animal.

Bald eagle:

- I am a scavenger of fish.
- There are more of me in Alaska than in all the other states combined.
- I just built a massive stick nest in a white spruce at the river's edge. I plan to nest there for several years.
- It took me five years to grow these white feathers on my head. Now maybe I'll get the respect I deserve.

Beaver:

- I am the largest rodent.
- I live in a domed shaped lodge.
- When danger is present, I warn others with a loud slap of my tail.

Information Cards
These are a couple of examples of the information cards that go with each puppet. They are given to each player so they can answer the questions and share the information with the other participants.

Animal	Bald eagle
Description	Adults are unmistakable with their white heads, tails and yellow beaks. When a bald eagle soars, its wings are held flat.
Were to look	Since their primary food is fish, they are found near water.
When to look	Daytime. They depend on daylight for their keen eyesight.
Fact 1	They build massive stick nests which are used for several years. The nests are located in old growth timber near the coast or large rivers and lakes.
Fact 2	Bald eagles are scavengers more than predators and subsist mainly on dead and dying fish. They will feed on birds and small mammals when fish are not available.
Fact 3	There are more bald eagles in Alaska than in all the other states combined.
Fire effects	Fire may destroy nests and nesting sites. Fires will increase populations of small rodents and rabbits which bald eagles occasionally prey upon. So fire has mixed effects.

Animal	Beaver
Description	The stick-and-mud dams and the dome shaped house that beaver build are sure signs of their presence. Beaver are important furbearers.
Where to look	Streams, lakes, and ponds. Aside from their dams and homes, look for stumps showing tooth marks, and sticks with bark chewed off.
When to look	Beaver are active during the evenings through the night and into the mornings. You are not likely to see them during the day.
Fact 1	Beaver are very important water conservationists. They create wetlands. Their ponds provide valuable habitat for other creatures.
Fact 2	The entrance to a beaver lodge is underwater and below the winter ice level. The lodge's walls are up to three feet thick and are bear proof.
Fact 3	Beaver feed on the bark of aspen, poplar, birch, willow, and alder. Their ponds create good habitat for these types of plants.

Fire effects	Fire has very little effect on beaver or their habitat.

Habitats. Good posters help get across these basic habitat types. Photos or illustrations should be included.

Wetlands:

Aquatic—Lakes, rivers, and sloughs.
Riparian—The stream side environment.
Muskeg—A wet black spruce woodland with a thick mat of mosses.
Bogs—A treeless wet area of mosses and shrubs growing over peat.
Tussocks—Plants that form in tufts of dense clusters of many stems. They are often found in wet areas.

Forests of the interior:

Spruce—A forest dominated by spruce.
Broadleaf—Forests of White Birch, Aspen, Cottonwood
Mixed—Forests of broadleaf (White Birch, Aspen, Cottonwood) and Spruce.
Taiga—The open forest where trees are widespread (often Black Spruce).

Tundra, a cold climate landscape having a vegetation without trees:

Alpine tundra—Treeless due to high elevation.
Arctic tundra —Treeless due to extreme northern latitude.

Creature questions. These are the questions that are asked of the puppet characters who are played by the visitors. Use your own discretion as to what and how many questions you ask each participant. You will have plenty of opportunity to add information yourself, its up to you. The whole game is designed to let people share information in an uninhibited format.

Bald eagle:

1. Where do we usually find you?
2. What time are we usually likely to see you? Why is that?
3. How can we identify you when you are flying?
4. Is fire good or bad for you?

Beaver:

1. What are some signs of your presence?
2. Where are we likely to see you during the day?
3. Why are your ponds important?
4. Why aren't you afraid of bears in the winter?
5. What are your favorite foods?
6. How do you feel about wildfire?

WILD ANIMALS IN PROGRAMMING: INTERPRETATION, REGULATIONS, SELECTION CRITERIA, AND HOUSING STANDARDS

Keston Woodyatt, Wildlife Specialist
Willowbrook Wildlife Center
525 S. Park Blvd.
Glen Ellyn, IL 60137

ABSTRACT: *Throughout the country, different public visitor centers are exhibiting live animals (both wild and domestic). This is a complicated topic with many different opinions being expressed. The interpretive pros and cons, regulations, exhibit criteria and housing standards will be discussed in this paper.*

KEYWORDS: *Wildlife programming, regulations, criteria, housing.*

Introduction

Interpreters use many different styles and methods. When the use of animals (either wild or domestic) is involved, there are conditions which should be followed to uphold the value of the interpretation. Many nature centers, wildlife preserves, forest preserves, and other public visitor areas have live animals in programming and on display. Before any live animal is used for display or in programming, a number of different topics should be researched. A short list of these include: The benefits/drawbacks of the undertaking, the state and federal laws governing the species, and housing requirements.

The National Wildlife Rehabilitators Association does not currently have a position statement regarding the use of live animals in programming.[1] The National Science Teachers Association does have a code of practice on animals in schools recommended for use at all levels of education (WAFWA and WREEC 1983). The U.S. Fish and Wildlife Service (USFWS) is currently working with states to develop standards applicable to the animals the USFWS regulates.[1]

It should be noted that when a decision is made to use live animals in programming and the animal(s) is/are acquired, the life of the animal(s) are from then on entrusted to the programmer.[2] If the programming is already of high quality, the need for live animals may not be necessary.[3] The many alternatives to live animals should always be researched.

Interpretation

A number of questions should be asked prior to programming with live animals. Some of these include: What is the message the public will receive? How much interpretation will be needed to get an accurate message across to the public? What types of interpretation (signage, one-on-one) will be needed? Whenever live animals are used in programming, certain principles should always be followed. These include:[4]

1. The interpreter *must* set the rules and maintain control over the group. If rules are not firmly established, the safety of the animal, audience and interpreter is jeopardized.

2. Avoid large groups of children. Larger groups are more difficult to control. In addition, smaller groups will retain more of what is said.

3. Live animals will invoke much story telling in children. To keep the program flowing, limit the number of stories. Be sure to have a question and answer session at the end of the program.

4. Remember to always be in charge. If things get out of control, do not be afraid to stop the program for the sake of safety.

Sometimes, it is thought "the bigger the better." This is not always true, and at times may be quite dangerous when using live animals in programming. In interpretation, sometimes the greatest impact is made with the smallest items. Therefore, there may not be a need for a large animal in the program.[2] This is up to the programmer.

There are many positive and negative features to using live animals in programming. These include:

Pros

1. Using live animals in programming allows the presenter to attract and hold the audience's attention (Thrune 1993). Entertainment without education in our line of work is useless.

2. Using live animals in programming elicits an emotional response that facilitates learning and remembering (Thrune 1993).

3. Using live animals in programming allows people to make personal connections with the natural environment and the topic being presented (Iowa Association of Naturalist 1994).

Cons

1. Using live animals in programming is expensive in regards to food and housing. The housing and diets must be tailored to each individual animal to ensure a high quality of life is maintained (Thrune 1993).

2. May be viewed as "A wild bird living in a cage for the rest of its life is like a paraplegic strapped in a wheelchair and left in a closet (Orendorff 1994).

3. Any wild animal is going to experience stress when in front of people. This is potentially dangerous or fatal to the animal.

Regulations—Federal
Regardless of the animal used in programming, all appropriate permits must be obtained prior to acquiring any animal(s). Federal permits are required for all migratory bird species. These include all birds (except House Sparrows, European Starlings, Rock Doves, and upland game birds). Information on federal permitting is available by writing: U.S. Fish and Wildlife Service—Law Enforcement, P.O. Box 45, Federal Building, Fort Snelling, MN, 55111-0045. The U.S. Fish and Wildlife Service only regulates the exhibition of birds (Iowa Naturalists 1994). There are different types of permits (education, mounted specimen, collection) needed depending on the interpreter's use of the birds. The exhibition of domestic and non-bird species are regulated by the U.S. Department of Agriculture (USDA). Information on this permitting is available at USDA, APHIS, REAC, Animal Care Staff, P.O. Box 96464, Washington, D.C. 20090-6464.

U.S. Fish and Wildlife Service. When applying for a special purpose possession/education permit, the interpreter will need to provide the following information.[3]

1. The experience the programmer has had in handling and caring for the species requested.

2. The name of the organization supporting the programming.

3. A brief outline of the presentation.

4. The fee charged for the program. This requires an explanation as to why there is a fee.

5. The number of migratory bird species wanted and why these are needed for the programming.

6. The source used for acquiring the migratory bird species.

7. How will the birds be transported to and from the programs.

8. Describe the housing for the bird(s).

9. A copy of the state permit that authorizes the programming must be included.

10. List the names and level of experience of all those individuals who will be working with the birds.

The following are the standard conditions which must be met to receive and maintain a special purpose possession permit:[3]

1. The permit must be carried and exhibited at all times when programming is being done.

2. When raptors are used, the facilities and equipment used must meet or exceed those required to receive a federal falconry license (50 CFR 21.29 [g] [1] [2]). All other migratory species must be maintained as required in 50 CFR 14.201.

3. No petting of the birds is allowed at any time. The animals are wild animals. Teach the audience this and how to respect the animal's wild nature.

4. Records as outlined in 50 CFR 13.46 must be maintained on all migratory birds.

5. All deaths or escapes must be reported to the USFWS within 48 hours. No transfers, acquisitions, dispositions may be done without the written permission of the USFWS.

6. No migratory bird species may be used for the commercialization or endorsement of any products, merchandise, goods or services.

7. Raptors may not be flown over, through or immediately adjacent to any public. The birds may only be manned by those authorized on the permit.

For the use of migratory bird mounted specimens, the following conditions must be met:[3]

1. A copy of the permit must be carried and exhibited at all times while exercising its authority.

2. All birds, nests, and eggs remain the property of the USFWS.

3. Any loss or damage to the specimens must be reported immediately.

4. Records must be maintained as outlined in 50 CFR 13.46.

5. No specimens may be displayed to imply personal use by the permittee nor representation, promotion, or endorsement of any products, merchandise, goods and services, business, company, corporation, or other organization.

6. Permission granted by a USFWS permit can not be exercised contrary to the laws of appropriate state agencies.

U.S. Department of Agriculture. Any time a warm-blooded animal is bought, sold, exhibited, transported commercially, or used in experiments or education, the facility or person performing these activities must be licensed or registered with the USDA. The Code of Federal Regulations, Title 9, Chapter 1, Subchapter A, states the legal requirements for businesses regulated by the Animal Welfare Act. The Animal and Plant Health Inspection Service (APHIS) is the branch of the USDA which performs this regulation.

If animals are on display to the public or performances are conducted featuring animals, you must be licensed as an exhibitor. Some of the information needed by APHIS include: the number and species of exhibit animals you have and the annual income you receive from exhibiting the animals. Regardless of the owner, animal exhibits which are open to the public (zoological parks) must be licensed. Petting zoos with regulated animals must be licensed and are subject to special regulations protecting the animals and public. When animals are being exhibited doing tricks or shows, the facility must be licensed. Under law, all animals must receive the same quality of housing and other care, whether performing or not (USDA 1994).

Regulations—State

In addition to federal permits, state permits are required for certain species. This requirement varies from state to state. For example, in Missouri, the use of permanently injured birds of prey in programming is prohibited. Only those birds raised in captivity can be used. In Illinois, however, the use of permanently injured birds of prey is allowed. Inquiries into this should be directed to the state conservation or natural resources department.

Selection Criteria and Housing Standards

Selection Criteria. The following are the selection criteria for exhibit wild animals used at Willowbrook Wildlife Center.

Physical criteria:

1. If the animal has a physical disability, it must be to the extent that it cannot be released.

2. Physical disability does not contribute to the continued or prolonged suffering of the individual.

3. Physical disability does not cause further deterioration of the animal.

4. Physical disability does not cause the animal to display unnatural behavior in captivity.

5. Physical disability does not prevent it from protecting itself from cage mates.

6. Physical disability does not cause the animal to be a "high maintenance" individual.

7. Physical disability does not result in a "grotesque" exhibit.

Behavioral criteria:

1. If the animal has a behavioral disability, it must be to the extent that it is incapable of surviving in the wild.

2. Captivity does not cause the animal to display inappropriate behavior.

3. Individual does not pose a safety or health risk to the public, keepers, or volunteers.

4. Individual will not succumb to further injury or disease due to stress.

Animal husbandry criteria:

1. Appropriate housing must be available for the individual, within 90 days, which will allow it to survive without further deterioration or injury.

2. Proper dietary needs can be met satisfactorily year-round and within budget.

3. Adequate paid staff is available to maintain and care for the animal appropriately.

These criteria are provided simply as an example and not as guidelines. Individuals should be knowledgeable of their own state restrictions on the exhibit of wild animals. The exhibit of domestic animals is regulated by the U.S. Department of Agriculture.

Housing standards. The USFWS is currently working with the various states to develop standards for use with migratory bird species.[3] However, at the time of this writing, the only standards for birds are those outlined in the "regulations" section of this paper. The standards for nonbird species and domestic animals have also been discussed in the "regulations" section of this paper.

The National Wildlife Rehabilitators Association (NWRA)in joint effort with the International Wildlife Rehabilitators Council (IWRC) have established minimum standards for the rehabilitation of wild animals.[5] These standards can be used only as a reference. It should be realized that for the humane care of exhibit animals, the cages will need to be larger than the specifications outlined in this standards manual. The NWRA is currently working to establish recommended housing standards for exhibit wild animals.[1]

It should be noted that regardless of the size of the cage, the housing materials, out of public sight areas, and cage furniture (perches, nest boxes, etc.) will all be different depending on the individual animal(s) in the cage. It is important that the programmer understand this and be committed to adapting each cage to the needs of its inhabitant(s).[3]

References Cited

Neumann, Kay. 1994. *Educating with Raptors a Resource Booklet.* Carrol, IA: Stone Printing.

Orendorff, Bea. 1994. Outreach raptor—ambassadors or exploited invalids? *NWRA Quarterly* 12(1).

Thrune, Elaine. 1993. Wild animals in education. *NWRA Newsline* 11(3).

U.S. Department of Agriculture. 1994. *Licensing and Registration Under the Animal Welfare Act, Guidelines for Dealers, Exhibitors, Transporters, and Researchers.* Program Aid 1117. 20 pp.

Western Association of Fish and Wildlife Agencies (WAFWA) and Western Regional Environmental Education Council (WREEC). 1983. *Project Wild.* Boulder, CO: Wildlife Agencies and Western Regional Environmental Education Council.

Notes

[1] Bulander, Marlys. 1996. Personal Communication.

[2] Thrune, Elaine. 1996. Personal Communication.

[3] Horton, Melissa. 1996. Personal Communication.

[4] Howell, Sue. 1996. The Wild, Wild World of Education. Notes from the National Wildlife Rehabilitator's Association national conference. Houston, TX.

[5] *Wildlife Rehabilitation Minimum Standards* is available by contacting the NWRA at NWRA Publications, 14 North 7th Avenue, St. Cloud, MN, 56303 or 320-259-4086.

Information Highway

Far from where we are, air owns those ranches our trees hardly hear of—open places braced against cold hills. Mornings, that news hits the leaves like rain, and we stop everything time brings, and freeze that one, open, great, real thing, the world's gift—day.

—*William Stafford, MONTANA ECOLOGUE, 1966*

HIGHWAY TO THE TROPICS: AN EDUCATIONAL RESEARCH PROJECT ON THE INTERNET

Michael J. Kennedy, Education Specialist
Mark Martell, Biologist
The Raptor Center
University of Minnesota
1920 Fitch Ave.
St. Paul, MN 55108

ABSTRACT: The Raptor Center at the University of Minnesota received a two-year grant from the Minnesota legislature to explore ways to incorporate research and environmental education utilizing the Internet. The Highway to the Tropics project was designed and implemented in September 1995. One year later, the project is being utilized by Minnesota school children as well as children from across the world. The key to the project's success has been interactive activities and marketing.

KEYWORDS: Internet, environmental education, raptors, osprey, migration.

Introduction

The Raptor Center (TRC) at the University of Minnesota has been involved in environmental education for more than 20 years, most of which has taken place on a regional basis in Minnesota, Wisconsin, Iowa, North Dakota, and South Dakota. As research and rehabilitation projects expanded beyond the region to national and international levels, a need was created for environmental education to expand as well. New satellite technology in field biology enabled data about migration to be obtained almost instantly with little investment of time compared to other methods such as banding, not to mention the broader scope of studies which are now possible with satellite technology. At the same time, the Internet was making communication easier and more accessible in the "global village." It seemed logical as an organization to take advantage of these technological accomplishments and apply them to environmental education and interpretive programming.

Background

Osprey research at TRC was about to embark on a migration and wintering study of Minnesota birds using satellite-telemetry backpacks in early summer of 1995. This research was focused on a number of goals: (1) to determine migrational pathways and wintering areas for Minnesota osprey, (2) to determine if migrational pathways and wintering areas vary by sex, (3) to determine if migration pathways and wintering areas vary by nest location, and (4) to determine if individual birds are loyal to migration pathways and wintering areas.

At the same time, The Raptor Center's Web site was receiving increased "hits," or use. The only raptor center on-line for a year and a half, The Raptor Center's Web site was developed in October 1994. Currently the site receives 2,500 hits per day. As more and more schools were hooking up the "information superhighway," The Raptor Center decided to jump on the bandwagon and find a way to use the Internet as a tool to expand environmental education efforts with schools.

This decision became easier after $250,000 was granted to The Raptor Center on the recommendation of the Legislative Commission on Minnesota Resources to the Minnesota Legislature. A $10,000 grant from the University of Minnesota Extension Service for teacher workshops was also rewarded to The Raptor Center. From the start, The Raptor Center's intent was to develop a project which would be free in the development stage and then implement a fee structure to sustain the project in the long term.

Highway to the Tropics: Research and Education

Research

The research portion of the project is exposed as much as possible through the educational programming. There have been times during the project that the decision was made to omit portions of the preliminary findings for fear of non-science people from drawing inaccurate conclusions about the study, or worse using the raw biological field data out of context. This is an area of great concern to the project biologists.

Two ospreys were trapped and fitted with packs the first year to test how to best accomplish project goals. This past summer ospreys were trapped in Oregon and New York as well as Minnesota. Trapping techniques, placement of the backpack, and release/recovery of the osprey were documented on video to utilize in "quick-time movies" on the Web site. Data received from the backpacks is utilized in some of the lesson plans.

Cooperating biologists in Russia, England, and Germany are also providing migration research data from their countries. This will allow for comparisons regarding arrival dates to breeding grounds, departure dates from wintering areas, and other interesting parallels.

Education

The educational portion of the Highway to the Tropics project is composed of several areas on TRC Web site. These areas include: Teacher Lesson Plans, Family Activities, Talk to the Scientist, Updates and Resources, and Migration Data, and Project Pages. Our target audience is formal education grades 4–8 although we recognize the need to accommodate the secondary audience, families. We feel the different areas on the Web site offer many choices to the user whether they be schools, families, seniors, or individuals. The materials created facilitate the learning by the general public as well as science teachers. Many activities have open-ended creative answers. Some answers vary depending on the geographic area and therefore an area to "share" findings, Project Pages, was formed to accommodate the work participants are doing.

Teacher Lesson Plans contains a teacher survey and 16 lesson plans. The lessons span a wide range of areas concerning the osprey including: rainforests, wetlands, artificial nest structures, pond and lake study, river study, and even culture and raptors.

Family Activities is the area with the most diverse set of activities. Everything from finger puppets and coloring pages to observation sheets for bird watchers can be found in this area. Again, where appropriate, links to the Project Pages are included.

Talk to the Scientist was developed to facilitate interaction between the public and the biology staff conducting the research. A separate e-mail account, osprey@tc.umn.edu/, was established to provide a forum for Web site visitors to pose questions. The answers are given in the Web site and cataloged for future users. This way we do not answer the same questions over and over!

Updates and Resources provides users with short news bites about the project. Articles about field work, teacher workshops, and ideas from other educators are included. A detailed resource list of other sources of information about raptors and ospreys can also be found in this area. These resources are electronic, print, and video.

Migration Data is a short cut for those interested in "where the birds are." Some folks just plain don't need or want anything other than to check in every couple of days and find out what stage the migration is at. It also provides up-to-date data for teachers who have already downloaded the lesson.

In addition to the lesson plans, teacher workshops are being conducted statewide as an introduction to the project. These two-hour introductory workshops include brief discussions about computer terminology, "live" hook-up and browsing on The Raptor Center Web site, and a sampler of activities found in the lesson plans on the Web site. At the end of the workshop, a round-table discussion is held about the merits of using the Internet as a tool in environmental education. This is very helpful from a design point of view.

Classroom materials which complement some of the on-line lesson plans are available for a small fee. Those are not necessary; however they do make the lessons more user friendly. The on-line lessons were designed to enable participating teachers to conduct these activities with or without the materials.

Future Challenges

Two major challenges arose in the process of developing Highway to the Tropics. How does this grant help The Raptor Center develop a program that financially pays for itself over time? Does the inequity of computer access limit the participants or are we just ahead of the curve?

How does this grant help The Raptor Center develop a program that financially pays for itself over time? Other Internet learning programs and projects range in fees from $10 per teacher to $200 per teacher. The longevity of individual projects with fees varies from 2-1/2 years to a very short life span on the Internet. The Raptor Center feels it has a worthy project based on good science and it will survive the test of time, even with a fee. However, we do feel the need to weigh very carefully the amount of staff time involved to reach the end product. It takes a great deal of staff time to ensure that questions submitted by students and teachers are answered in a timely manner, new information is posted on-line, and that teacher workshops are planned, conducted and evaluated, not to mention the development of new materials for students, families, and teachers.

Does the inequity of computer access limit the participants or are we just ahead of the curve? This is somewhat related to the above challenge. The more people on-line, the more the potential to have users or customers. Will the Internet go the way of the 8-track tape player and the hoola-hoop? Time will tell, but we think it is here to stay. One method that seems to solve the problem of where to access the Internet, is to include a listing of local Internet providers in the materials handed out at teacher workshops. Some major providers give the Internet to schools for free.

Conclusion

The Internet is here to stay. Interpreters must find a way to stay abreast of technological changes and use them to their advantage to educate the public about the cultural, historical, and natural world around them; however, we must use these tools wisely and not let them replace our cultural, historical and natural world. The Raptor Center has begun to unravel the puzzle of using this new technology to our advantage, however we have just scratched the surface. How can we implement this into public interpretive programming? Can we do teacher workshops "live" on-line? Can the Internet be used to disseminate information such as pretest and posttest for field trips to local facilities? These questions will undoubtably challenge us as we move into the 21st century in the field of interpretation.

A SPACE AND A PLACE FOR A COMPUTER INTERACTIVE EXHIBIT

Cindy Samples
U.S. Army Corps of Engineers
Albeni Falls Dam
P.O. Box 310
Newport, WA 99156

Vicky Silcox
U.S. Army Corps of Engineers
Libby Dam
17115 Hwy. 37
Libby, MT 5993-9703

***ABSTRACT**: So you have decided you want a computer interactive exhibit, now what do you do? When we decided we wanted computer interactive exhibits in our visitor centers we asked this very question. We had to develop an understanding of the terminology used in this industry. In addition, we discovered developing mockups and flow charts helped to chart our course as we took off on our interactive exhibit adventure.*

***KEYWORDS:** Computer interactive, touch screen, flow charts, mockup, CD-ROM, information kiosk, role playing.*

The Type of Computer Interactive Exhibit

The beginning steps in developing a computer interactive exhibit include deciding what type of exhibit you want and what your budget can support. The type of exhibit you need begins with asking yourself several questions. Do you want the visitor to discover how to get somewhere? Do you want the visitor to participate in a simulation/role playing exhibit? Do you want the visitor to leave with a print-out of information? Computer interactive exhibits can be categorized. Once you have answered the questions your exhibit is placed into one of two categories for computer interactives.

Categories of Computer Interactive Exhibits

Role playing/simulation. These are exhibits that engage the visitor in critical thinking. The visitor has to analyze the message presented and make choices. The choices may build on each other thus providing feedback at the end of the program displaying the outcome of the choices made.

Information kiosk. These are exhibits that provide information to the visitor. It is not a game or a simulation, it merely provides information. These exhibits may oftentimes have printers as part of the hardware. This provides the visitor with a printout of information requested.

Understanding the Terminology

The terminology can be overwhelming. There are so many types of equipment that can be used in a computer interactive exhibit. The words *analog, digital, MPEG, compressed video, CD-ROM, laser,* and, of course, *budget* were in our conversations as we tried to decide what was the best technology to use in our exhibits. What do all these mean and which ones are important to know? All of them. You cannot embark on a project like this without doing your homework. How much homework is required depends on if you have decided to create an in-house exhibit or purchase an exhibit from a contractor. We chose to use a contractor due to that overused word—*downsizing.* The time devoted to developing an exhibit is immense, although an in-house exhibit can be accomplished. We discovered two articles on this subject in our research, "Multi-Media—The Electronic Brochure" and "Interpretation and Fries: Partnership Between the National Parks and McDonalds." These articles may be the guiding directive you need to develop your exhibit. These articles along with conversations with many people who had ventured into the realm of this technology helped us to develop our cheat sheet of terminology.

Terminology Cheat Sheet

We discovered developing a cheat sheet helped us to stay up with technology. It helped us to evaluate contract proposals once we knew the advantages and disadvantages of each type of system.

Accessibility standards for exhibit. The highest touch point on the screen, no higher than 48" from the floor. The bottom edge of the touch screen, no higher than 34" from floor. The furthest touch point on the screen, no more than 24" from the edge of the exhibit.

Analog. The signal corresponds to an electronic response.

Auxiliary monitor. This increases visibility for groups. It adds another monitor that is usually a minimum of 20 inches and plays both computer and laser disc images—if using laser disc, may require video adapter card.

CD-ROM. Digital format. Used with a PC.

Compressed video. Video uses a lot of space. Compressed video condenses the images using only the data needed to provide an image. Disadvantage: Loss of resolution quality of video.

Digital. The signal corresponds to a magnetic response. Probably the wave of the future.

GIGABYTE. Twenty minutes of real-time video uses approximately 1 gigabyte of space.

Laser disc player. Analog format. Used with a PC. Video quality is excellent because the video is not compressed.

MPEG. A method of compressing video.

MPEG video board. Part of the PC that allows it to play MPEG video. Advantage over laser disc—one less piece of equipment. Disadvantage—laser disc video quality is better.

Real time video. Takes up an enormous amount of space on a hard drive or CD-ROM. If using a lot of video use a laser disc.

Run-only mode. Companies program your exhibit and provide you the run-only mode. Disadvantage: You cannot make changes. Advantages: You did not have to author the program.

Software. Used to program the hardware. Examples of programs used: IBM Linkway, Media Master, Macromedia's Director for Windows.

Touch-screen monitor. A monitor that allows the visitor to make choices by touching an icon on the screen.

Developing the Program

We developed the design criteria for the exhibits. We discovered that this exhibit technology is so new, that there is not ìoneî guideline or resource book that could provide us with all the information we needed to develop an exhibit. So we compiled design criteria by researching and taking from many contracts written by other Corps Lakes, articles and handouts we received at a Region 10 workshop.

Design Criteria

Attract screen. What the visitor sees as they approach the exhibit is considered the "attract" screen. This first screen is often called the "attract loop." Unless a visitor makes a choice the attract loop images change, so it provides a screen saver for the monitor.

Topic choices. Icons or visual "buttons" provide the visitor with choices. Each screen should be limited to one topic with four to six choices or icons.

Orientation. The most effective programs provide an instruction screen only when a visitor requests instructions. The visitor should also be able to press an icon that allows them to "quit." When a visitor stops participating in the exhibit, the exhibit should return to the attract screen after a predetermined time interval.

Explanations. Do not assume all visitors know what to do. Provide the user with simple instructions on each screen, "Touch here."

Feedback. The visitor should receive feedback in the form of visual images, audio or printouts. The feedback reinforces the learning as well as providing the information requested.

Flow charts. Probably the most beneficial and critical step in developing a computer interactive exhibit is the development of the flow chart. It helps to use paper mock ups to check and critique your flow chart. The flow charts show the progression of your program. How many layers used depends on how in-depth you want the exhibit to be and how much time you want a visitor to spend at the exhibit.

Mock-up. This is the initial prototype. It is helpful to visualize how the exhibit will look before any programming time is expended. This is especially necessary if you plan to program your own exhibit. A contractor also uses the mock-up so that the client can review the exhibit before programming time is expended. This hard-copy review is the tool that helps you visualize your computer interactive.

Summary

When we were researching for information on how to develop a computer interactive exhibit we received a message from a colleague Greg Miller. He said, "It's been my experience that hardware costs are not the real determining factor in the development of an exhibit. The quality of MPEG vs. Laser is also probably not a significant factor for most visitor centers. The single biggest factor is program development." At the time, we did not really understand the significance of what he said. As we have delved into this tunnel of technology and are coming out the other side we truly appreciate his words of wisdom. Oftentimes the real important issues become overshadowed by budgets and the new technology but after going through the process we wholeheartedly agree with his words of

BEST COPY AVAILABLE

wisdom. Know what you want the program to do, develop the flow chart and then find the equipment.

References Cited

Thomas, Jim. 1995. Multimedia: Your electronic brochure. *Legacy* July/August: 34-35.

O'Donnell, Bill, and Cindy Von Halle. 1995. Interpretation and fries: A partnership between the National Park Service and McDonalds. In: *The 1995 Interpretive Sourcebook*. Ft. Collins, CO: National Assocation for Interpretation. 135-139.

Worts, Douglas, and Kris Morrissey. 1995. *Exploring Effective Technologies in Visitor Experiences.* 1995 NAI Region 10 Workshop Handout.

Additional References

We are deeply indebted to these people. They provided us with valuable information and moral support as we embarked on this technological adventure.

Jeff Philip, Park Ranger, McNary Dam, Umatilla, OR, U.S. Army Corps of Engineers

Maureen Curran, Park Ranger, Rend Lake, Herrin, IL, U.S. Army Corps of Engineers

Greg Miller, Outdoor Recreation Planner, Kansas City, MO, U.S. Army Corps of Engineers

Albeni Falls and Libby Dam Contractor: Boston Productions, Inc., 648 Beacon Street, Boston, MA 02215, (617)236-1180.

TO WALDEN POND BY TOUCH SCREEN

Karl W. Honkonen
Chief, Bureau of Interpretive and Ranger Services
Massachusetts Department of Environmental Management
Division of Forests and Parks
100 Cambridge Street
Boston, MA 02202

Karst R. Hoogeboom
Project Manager
Massachusetts Department of Environmental Management
Division of Resource Conservation
100 Cambridge Street
Boston, MA 02202

***ABSTRACT**: The emerging technology found in computerized touch screens has brought visitors to Walden Pond State Reservation in Concord, MA, much closer to the life and times of Henry David Thoreau and the natural history surrounding Walden Pond. Other Walden Pond attractions as well as other state parks in Massachusetts are identified.*

***KEYWORDS**: CD-ROM, interactive kiosks, historic interpretation.*

Introduction

Henry David Thoreau lived at Walden Pond from July 1845 to September 1847. While at Walden, Thoreau studied the interrelationships of nature and developed his theory of forest succession, which became the basis of the study of ecology. His experience at Walden Pond provided the material for the book *Walden*, which has been enjoyed by generations of readers and is credited with helping to inspire increased awareness and respect for the natural environment.

The worldwide importance of Walden Pond from a historical and cultural standpoint makes Walden Pond State Reservation a destination for visitors to the region. Over 600,000 people visit Walden Pond each year, either as tourists or for recreational purposes.

In acknowledgment of the sesquicentennial of Thoreau's move to Walden Pond on July 4, 1995, and recognizing the increased attention that has been focused on Walden as a result of the efforts to protect the area around Walden Pond State Reservation, the Massachusetts Department of Environmental Management (DEM) will provide students, tourists and park users with customized, reliable, visually attractive and easily accessible information on Walden Pond, the many themes associated with Walden and Thoreau, and the state's Forest and Park system. DEM is working with The Rendon Group, Beacon Learning, and creative director Peter Simmons to develop the interactive display.

Program Objectives

- Supplement existing visitor services by providing an orientation and introduction to the park.

- Provide detailed information about Walden Pond and Thoreau that isn't normally featured in interpretive presentations.

- List regional tourist information and information on DEM Forests and Parks statewide.

- Provide a merchant's directory of places to eat, sleep and shop in the Concord and Lincoln, MA, area.

- Provide a calendar of events, both local and at major tourist destinations.

- Answer the most frequently asked questions about Walden and Thoreau.

Kiosk Design

The display is designed to meet the standards of the Americans with Disabilities Act (ADA) and to be used by visitors without staff assistance; instructions for use are incorporated into the program and geared for the average park user. The display utilizes video, audio, text and maps, and is designed to be unobtrusive to staff and visitors if they choose to ignore it.

The interactive display is a series of touchscreens with a descending tree of increasingly specific topics, some of which will link to other topics elsewhere in the program. Components of the program, such as calendars of events, will be periodically updated. The display method is a stand-alone kiosk with a 21" color monitor, an appropriate digital storage device, and laser disc and/or CD-ROM drive as necessary. A second 25" color monitor is provided adjacent to the kiosk to accommodate viewing by large groups. The system will have sufficient power, speed and memory to avoid noticeable delay in the retrieval of information as users move through the program.

The touchscreen program is the first phase of an overall Walden Pond interactive display. Its intent is to provide immediate responses to specific questions about Thoreau, Walden Pond, and the Concord area. A second phase will be a more philosophical and theatrical presentation, providing viewers with detailed passages covering such topics as transcendentalism, ecology, civil disobedience, etc. The second phase will also be designed as a teaching aid for use by educators and people with an interest in Thoreau and Walden Pond.

Other Massachusetts State Park sites

Fourteen million people visit Massachusetts state forests and parks every year, a system that encompasses approximately 300,000 acres within 140 separate facilities. It is the sixth largest state park system in the country, in the sixth smallest state in the country. Also, Massachusetts's state forests and parks will celebrate their 100th birthday in 1998.

In acknowledgement of DEM's centennial, and in recognition of the state park system's status as one of the premier state forest and park systems in the country, DEM intends to evaluate the Walden Pond State Reservation computerized touchscreen interactive introduction program as a prototype. This program would be utilized in 34 state forests and parks with significant tourist interest, are historically, culturally or ecologically significant, and/or experience high levels of visitation.

Interactive kiosks will allow visitors to get information they need in a visually interesting, entertaining and informative way, utilizing the lure of 20th-century technology.

Other Program Components Being Considered

- Links to the Massachusetts Heritage Discovery Network and MAG-Net.
- An ability to make campground reservations directly through the program.
- The option of printing out information, primarily road map directions and calendars of events.
- Language choices, including the possibility of Japanese, Spanish, German.
- Connections to the World Wide Web via a Walden Pond State Reservation home page.
- Conversion to CD-ROM for sale at the Reservation's Bookstore and other retail outlets.

What Would Thoreau Think?

With the interactive touchscreen interpretive program, DEM aspires to realize Thoreau's intent when he said, "I would make education a pleasant thing to the teacher and the scholar. This discipline, which we allow to be the end of life, should not be one thing in the schoolroom, and another in the street."

Or we could say...with the interactive touchscreen interpretive program, DEM seeks to rebut Thoreau when he said, "There is a chasm between knowledge and ignorance which the arches of science can never span."

A VIRTUAL WALK INTO THE PAST: THE PEOPLE IN THE PAST PROJECT

LouAnn Jacobson, Director
Bureau of Land Management
Anasazi Heritage Center
Dolores, CO 81323

ABSTRACT: *The Lowry CD-ROM/People in the Past Project is producing an interactive multi-media computer program that encourages users to take a walking tour through Lowry Pueblo, a 12th-century site in southwest Colorado. Users will see the pueblo as it is today and how it might have appeared in A.D. 1100 with people using its rooms and spaces to meet the needs of their daily lives. The CD-ROM presents both archaeological perspectives and Puebloan perspectives on the past.*

KEYWORDS: *Cultural heritage, interactive, multimedia, partnership, archaeology, Native American, museum exhibit.*

Introduction

Colorado offers many opportunities to its residents and visitors—including a deeply imbedded cultural heritage that spans more than 1,000 years. Everyone knows about Mesa Verde National Park, but about 10 miles north of the Mesa Verde entrance, the Anasazi Heritage Center represents the ongoing benefits of cooperation, partnerships, and innovation in cultural heritage interpretation and visitor services. Thousands of local adults, school children, and national and international visitors come to the Anasazi Heritage Center each year and many participate in its educational programs.

The Anasazi Heritage Center opened in 1988, the result of an agreement forged in the mid-1970s in which the Bureau of Reclamation agreed to fund the Center's design, construction, and exhibitry as part of the construction of McPhee Dam and Reservoir and the associated Dolores Archaeological Program. In return, the Bureau of Land Management (BLM) agreed to operate the museum/ interpretive center and provide long term curation for artifacts and records generated by the Dolores Project. The Heritage Center uses its extensive collections in a series of Ancestral Pueblo lifeways exhibits. These exhibits present information on food preparation, hunting, agriculture, trade, clothing, etc.—in addition to exhibits on archaeological excavation and recordation; curation; and hands on exhibits with microscopes, computer programs and touch drawers.

By 1993, aging computer programs and exhibitry reflecting the dominance by archaeologists in interpretation of the past and the exclusion of Native American perspectives demanded a new approach. The People in the Past concept was presented by two people with skills one wouldn't expect to find in the rural Four Corners area. Theresa Breznau, Living Earth Studios, and Clay Hamilton, What's Up With That? Productions, reside in tiny Bluff, Utah. Walking through the door of Theresa's 100 year old stone house takes you into late twentieth century cyberspace. Breznau and Hamilton are two of the finest program illustrator-animator-producers in the Southwest and the Heritage Center was fortunate to be their choice as a partner in designing a new interactive computer program. The BLM's San Juan Resource Area archaeologist and the Southwest Natural and Cultural Heritage Association (SNCHA), the Heritage Center's interpretive association, also became partners in the project.

The People in the Past Project

After almost a year of discussion to establish the goals and general content of the program, we prepared a grant proposal to produce a program prototype. People in the Past would be an interactive multimedia computer program helping the user to (1) understand archaeology as a study of past events and cultures, (2) appreciate the contributions made by Native Americans to America's heritage, and (3) appreciate the importance of preserving archaeological sites, materials, and records. We believe that through education comes appreciation and through appreciation comes commitment to preservation.

People in the Past allows users to choose an archaeologist's interpretation of the past or a Pueblo Indian's perspective on many aspects of life at Lowry Pueblo, an A.D. 12th-century pueblo in Montezuma County, Colorado. Lowry Pueblo is a National Historic Landmark managed for public visitation by the Bureau of Land Management. It is centrally located within a large cluster of sites covering several square miles and was occupied from A.D. 1050 to the late A.D. 1200s.

Since our first meeting in the summer of 1993, the People in the Past project was awarded two grants totaling almost

$135,000 from the Colorado Historical Society's State Historical Fund. The State Historical Fund was established in 1991 with revenues generated from gambling operations in three historic towns in Colorado. Grants are awarded to projects that either preserve or promote the preservation of prehistoric and historic Colorado resources.

The prototype program, Phase I, was completed in March 1996. Breznau and Hamilton contributed hundreds of hours as part of our in-kind match for the grant. The Heritage Center provided project oversight, purchased software and equipment, and compiled records and photos that could be used in the program. SNCHA administered the grant funds and paid the bills. The BLAME San Juan Resource Area archaeologist provided archaeological expertise. Native Americans from San Juan Pueblo and Santa Clara Pueblo visited Lowry and the Heritage Center and provided insight into their culture, its traditions, and their personal connection with the past. A local writer, editor, and archaeological enthusiast, now the director of research at Crow Canyon Archaeological Center, wrote text and provided insight on all aspects of the program.

The prototype was produced on a Power Macintosh 8100 with one gigabyte of memory and 112 megs of RAM. A Pentium personal computer was used in the production of 3-D imagery. Primary design software included New Tech Lightwave software for 3D, Fractal Design Painter, and Macromedia Director and Freehand.

The program allows the user to explore Lowry in past and present time frames. Rooms are entered via ladders through rooftop doorways, artifacts can be examined from a three-dimensional viewpoint, animated sequences demonstrate how food was prepared, quick time videos show interviews with our Pueblo consultants and present preservation messages, narrated segments tell about the symbolism in a kiva mural (Figure 1) and about pueblo seasonal activities. Visiting the archaeologist's tent gives the user access to videos of interviews with Native Americans and others, photo albums of an excavation in process, excavation documents, and an exercise to determine the time of occupation through tree-ring dating. This prototype was installed at the Anasazi Heritage Center and we are gathering visitor reactions and comments to help us complete an expanded Phase II version which will serve as a permanent interactive exhibit. The final product will be available on CD-ROM and will be marketed by SNCHA.

Project Goals

There are tens of thousands of ancestral Puebloan archaeological sites in the Four Corners region. Many of these sites lie unprotected on private land and many more are on public lands where it is impossible for federal and state agencies to provide them with adequate protection from looting and vandalism. But they are a finite, irreplaceable part of our American heritage. Deliberate, irrevocable destruction of these sites, though diminishing, continues at an alarming rate. Creating a greater public awareness of the educational, scientific, and cultural value of these sites is a deterrent to "recreational" vandalism and looting. People in the Past employs sophisticated new, interactive technology to educate children and adults about the ancestral Puebloan archaeology of the Four Corners region. A greater appreciation of these sites will contribute to greater efforts to preserve them. Copies of the program will be made available to schools, colleges, museums, visitor centers, and individuals throughout the nation and should encourage preservation efforts elsewhere in the United States.

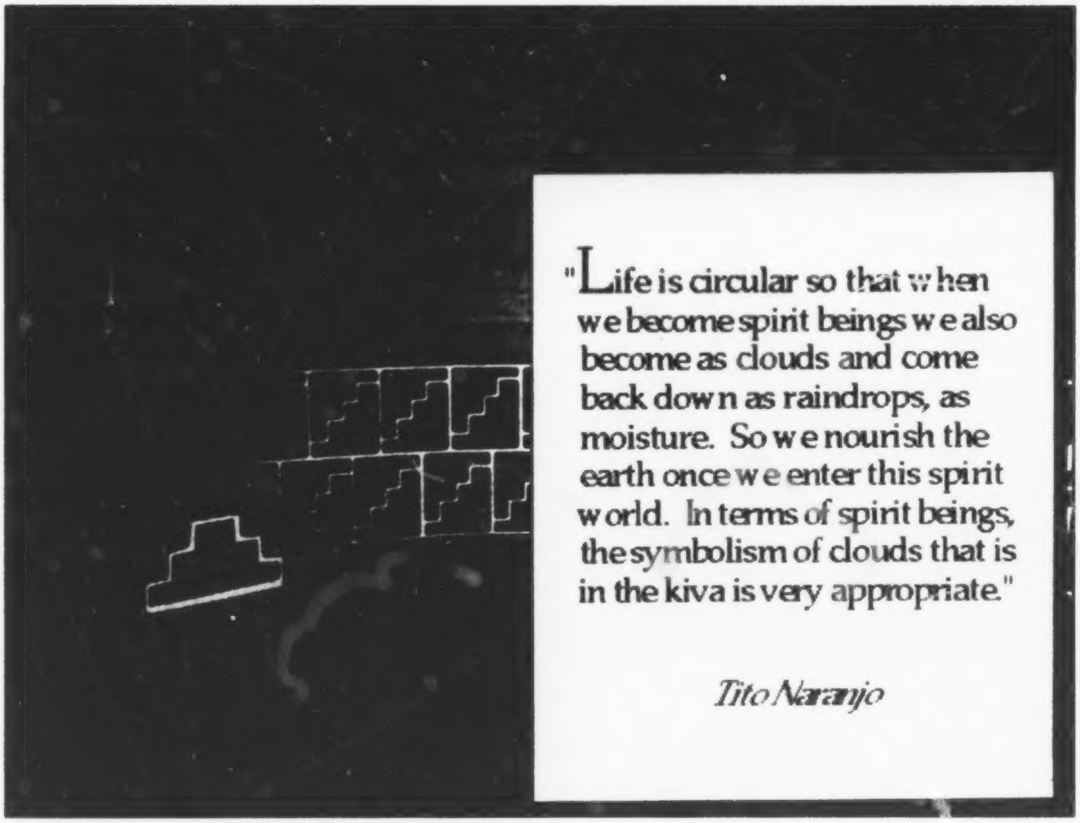
Current interpretation of archaeological sites and materials here relies heavily on the findings of archaeologists using scientific approaches to research. Rarely is a strong link made between the local archaeological record and the modern Puebloan communities not far away in New Mexico and Arizona. Even more rarely is a modern Pueblo Indian brought to a local archaeological site and invited to give a Puebloan perspective on the lives of her/his ancestors who occupied the Four Corners as recently as the late A.D. 1200s.

People in the Past presents both a scientific archaeological perspective and a Puebloan cultural perspective on a significant 12th-century site. The addition of on-site Native American interpretations emphasizes the cultural significance of all Puebloan sites throughout the Four Corners. These combined perspectives communicate the importance of studying, interpreting, and preserving the archaeological record worldwide. A preservation message is woven into its content, but People in the Past will rely upon education and enhanced appreciation of archaeology and Native American cultures to communicate the need for preserving what remains of the archaeological record here and elsewhere.

People in the Past allows users, including students of archaeology, to see that dissemination of knowledge gained through archaeological research can extend beyond technical reports into new mediums which make that knowledge accessible to the public. By using an actual archaeological site, People in the Past provides both a visual and an emotional link to the people who once lived there, putting the sights and sounds of daily life into a real architectural and geographical context.

Conclusions

The residents of southwest Colorado and the Four Corners region as a whole are increasingly aware of the economic value of preserving what remains of the archaeological record. Cortez, for instance, actively promotes itself as the "Archaeological Center of America." It also promotes itself



"Life is circular so that when we become spirit beings we also become as clouds and come back down as raindrops, as moisture. So we nourish the earth once we enter this spirit world. In terms of spirit beings, the symbolism of clouds that is in the kiva is very appropriate."

Tito Naranjo

Figure 1. The project includes Native American comments about Lowry Pueblo and its relationship to their cultural heritage.

as a gateway to modern Native American cultures. People in the Past will be a valuable tool for educating the local business community and civic leaders about the educational, scientific, and cultural values—in addition to the economic value—of the region's archaeological resources and about the contributions made by Native American cultures.

The People in the Past project represents a unique blend of partnerships: federal and state governments, public and private funding, archaeologists and Native Americans, computer technology and cultural tradition. The project benefits from the expertise and perspectives of all its participants. Visitors to the Anasazi Heritage Center will learn about and gain an appreciation for the cultural heritage of the Four Corners by visiting the 12th century via 20th-century technology.

Critical Issues

Angry as one may be at what careless people have done and still do to a noble habitat, it is hard to be pessimistic about the West. This is the native home of hope. When it finally learns that cooperation, not rugged individualism, is the pattern that most characterizes and preserves it, then it will have achieved itself and outlived its origins. Then it has a chance to create a society to match the scenery.

—*Wallace Stegner, THE SOUND OF MOUNTAIN WATER*

1-2-3—NLP

Smitty Parratt
Assistant Chief Interpreter
Redwood National and State Parks
Orick, CA 95555

ABSTRACT: *Principles of neurolinguistic programming (NLP), developed in the 1970s, radically changed our view of everyday interactions with other people and our ability to increase rapport. Some tenets of NLP are questioned by research studies, while others continue essentially unchallenged. Interactions between interpreters and the general public are often quite brief. It may be possible to utilize nonverbal and verbal NLP mirroring techniques, normally confined to the realm of the unconscious, to maximize the potential in these brief interactions. These techniques may also build better long-term interactions. Some of the most powerful techniques are the simplest to grasp and execute, and can create immediate and drastic improvements in all of our interactions.*

KEYWORDS: *Anchors, auditory, brief interactions, eye-accessing cues, interactional synchrony, interpersonal coordination, kinesthetic, representational systems, leading, mirroring, neurolinguistic programming, visual, zeitgeber.*

What Is NLP?

Neurolinguistic programming (NLP), was developed by research psychologists in the 1970s. Richard Bandler and John Grinder essentially fathered NLP. NLP refers to the ability to influence people's perceptions and responses through use of nonverbal and verbal tools. These tools include mirroring, leading, and monitoring representational systems.

The success of NLP depends on the fact that much can be communicated on an unconscious level, using "subliminal influences." In NLP, subliminal influences are generally messages (such as nonverbal cues) we could consciously perceive with little difficulty, as opposed to advertisements which subtly hide images in ordinary photos. These influences tend to escape our notice, yet we unconsciously understand and act upon them. They can powerfully affect our perceptions and actions.

The Power of Mirroring

Mirroring is a process, generally unconscious, wherein a person imitates the nonverbal or verbal cues of another person they are interacting with. An example is positioning your head and body similarly to the person you are conversing with. We can mirror posture, kinesics (movement), and breathing patterns to powerfully increase rapport. A cornerstone of NLP is that people like people who are like themselves; mirroring can rapidly increase rapport because we become like another person. Various studies describe the importance of the mirroring between mother and infant in normal development of the infant. Apparently, mirroring is essential to ego formation. In test cases, postural mirroring brought about a feeling in the other person of empathy and greater rapport. Focussing on the person you are interacting with is in itself a rapport-building behavior. Intentional mirroring requires that we pay complete attention to another person. This attention is perceived by the other person as a sign of increased care and sensitivity. The power of mirroring is truly astonishing. Bandler and Grinder reported healing a catatonic patient in Napa State Mental Hospital in California; he had not responded for several years to various therapy techniques. After 40 minutes of mirroring, the patient was abruptly brought out of his catatonic state and spoke. Other success stories abound, but do not constitute scientific proof. One creative study even reports cross-species mirroring.

Even the simplest mirroring steps tend to increase rapport. In increasing order of complexity, the components you can mirror are: stance (posture, direction), head position, gestures, voice patterns, breathing patterns, and predicate usage (predicates are adjectives, adverbs, verbs, and metaphors being utilized in speech). Another method of mirroring, made easier by our ability to deliberate in privacy, is to replicate another person's writing style, particularly the use of predicates. There is evidence that nonverbal mirroring is more compelling than verbal mirroring. Our nonverbal expressions are synchronized with our verbal expressions and other people's verbal expressions, unconsciously. The synchrony between our nonverbal communication and another person's verbal communication often continues on after verbal rapport has broken down; our gestures continue to mesh with the other person's speech even when our conversation falters.

When mirroring gestures, be sure not to mimic. Mimicking is a negative social taboo; we have a strong cultural restraint against it. Mimicking could produce the opposite results you desire, a complete breakdown of rapport. Delay your gestures and use opposite sides. For example, if the other person reaches forward with a pencil in their right hand, wait a second or two, then reach forward with your left hand and touch a paper or something else similar, but not identical. In a group, you should mirror the person you are talking to; otherwise, mirror the person you are most interested in gaining rapport with.

The existence of rapport can be tested after a period of mirroring, by changing your stance, head position, gestures, voice pattern, or breathing pattern several times or in combination and noticing if the other person mirrors you back (follows suit). If they do, this indicates that rapport has been achieved, and that you are leading. In mirroring, there is always a leader. Proving that rapport has been established is sufficient for our purposes; a clinical psychologist would continue from here to apply a treatment, since the other mirroring person tends to follow their lead. *Zeitgeber* (an interactant who sets the cyclic process), is the "leader" in the mirroring process. As the process of rapport cycles, leadership alternates between interacting people. People tend to mesh their cycles when interacting. Normally, the degree of synchrony in an interaction is the degree of congruence between the behavioral cycles of two or more people. The cycle can be altered by conscious effort to expedite rapport.

When a high level of rapport has been reached, both parties are more attentive, positive, and coordinated. People who are in rapport will demonstrate "interpersonal coordination," characterized by matching behavior and rhythm (interactional synchrony), as smoothly choreographed as a professional dance performance. Where there is not synchrony, there may be an inherently negative experience. The complexities of rhythm and simultaneous movement are difficult to perform on a conscious level. By practicing the simpler aspects of mirroring, however, they will soon become a "good habit" and the more complex features will automatically kick in; these types of interactions will tend to occur "automatically" more frequently in your interactions. You will have, in effect, gotten into a good habit.

The Finishing Touch, Representational Systems

People are wired in a predictable manner. Humans tend to collect information and perceive their world primarily through one of three representational systems. These are visual (seeing), kinesthetic (feeling), and auditory (hearing). Some psychologists further subdivide kinesthetic (kinesthetic, smell, and taste), but few people utilize smell or taste as dominant representational systems. A person could be referred to as a visual, kinesthetic, or auditory person, depending on their dominant representational system. Some studies indicate that preferred language mode (as measured by predicate usage) tends to match preferred representational system.

Approximately 60% of people are dominantly visual, with 20% each being dominantly kinesthetic or auditory, according to some sources. People use all three systems to some degree, but almost everyone dominates in one sphere. Although the concept of a primary or dominant representational system is generally accepted, studies question it. One study maintains that an auditory mode dominates during auditory imaging tasks, such as thinking about a musical piece; a kinesthetic mode during kinesthetic imaging tasks, such as thinking about a happy experience; and a visual mode during visual imaging tasks, such as picturing a scene from a movie. People tend to use the same patterns of representational systems in similar life situations rather predictably.

A visually dominant person primarily perceives the world though visual images, an auditory through sounds, and a kinesthetic through feelings, taste, and touch. It is common for a person who dominates in one of these spheres to dominate in another sphere for some tasks. For example, a visually dominant person might be auditory dominant when buying something. A kinesthetic dominant person might be visual dominant when driving. We cannot assume anything, but must observe carefully in each type of task or activity.

Soon after the birth of NLP, it was thought that we could reliably listen to the way a person talks, look at how they write, or watch the way their eyes move (eye-accessing cues) to assess their dominant representational system or the representational mode they are currently utilizing. According to eye-accessing theory, a right-handed person who is remembering a visual image looks up and to the left; if they are constructing a new visual image, they look up and to the right. If they are remembering an auditory experience, they look straight left; if they are constructing a new auditory experience, they look straight to the right. If they are having an internal dialogue with themselves, they look down and to the left; if they are accessing the kinesthetic portion of their mind, they look down and to the right. This is reversed, right for left, with a left-handed person.

Although this theory may be true, research in the 1980s and 1990s both supports and questions aspects of eye-accessing cues or predicate usage as indicators of representational system being accessed Particularly under attack is the relationship of eye-accessing cues to representational system being utilized (especially as an indicator of dominant representational system), although various studies support this relationship. The relationship of visual eye-accessing cues to representational system being accessed is generally supported. Practitioners should carefully observe not only predicate usage and eye movements, but also body language; do not jump to conclusions.

"I see what you mean," "He was a little green," or "It's crystal clear to me," are examples of statements with visual predicates. "I'm feeling hurt," "Can you smell the flowers?" or "This is a touchy situation" highlight kinesthetic predicates. "That is a loud shirt," "It's nice to have it quiet," or "Why don't you tone things down a little?" are examples of auditory predicate statements.

According to NLP theory, mirroring observed representational systems through thoughtful predicate word choices is likely to increase rapport, influence, comprehension, and relaxation. In a worst-case scenario, the effect will be neutral. For example, if a person predictably used a pattern of visual predicates, followed by auditory predicates, followed again by visual predicates, in a particular situation (such as asking questions at a visitor center counter or when buying something), you should use the same pattern when responding. You would be utilizing their strategy for this particular situation, which should be compelling for them. Salespersons have been successfully using this technique for some time. Several studies support observing and matching use of predicates in classroom teaching.

By emulating people's nonverbal and verbal behaviors, we can build "instant" rapport in brief interactions. Through NLP, we do not force people to like us; we encourage them to be in rapport with us because we irresistibly build trust and emotional bonds. If NLP involves a sense of betrayal or manipulation, successful rapport is unlikely. As long as the use of NLP involves a spirit of trust and cooperation, it remains a powerful tool in our profession.

References Cited

Bandler, R., and J. Grinder. 1975. *The Structure of Magic.* Palo Alto, CA: Science and Behavior Books.

Bandler, R., and J. Grinder. 1976. *The Structure of Magic II.* Palo Alto, CA: Science and Behavior Books.

Bandler, R., and J. Grinder. 1979. *Frogs into Princes—Neurolinguistic Programming.* Moab, UT: Real People Press.

Bech, C., and E. Bech. 1984. Test of the eye-movement hypothesis of neurolinguistic programming: A rebuttal of conclusions. *Perceptual and Motor Skills* 58(1):175-176.

Brooks, M. 1989. *Maximize Your Personal Charisma with Instant Rapport.* New York, NY: Warner Books.

Buckner, M., N. Meara, and E. and M. Reese. 1987. Eye movement as an indicator of sensory components in thought. *Journ. Counseling Psychology* 34(3):283-287.

Childers, J. 1985. Neurolinguistic programming: Enhancing teacher-student communications. *Journal of Humanistic Education and Development,* 24(1):32-39.

Coe, W., and J. Scharcoff. 1985. An empirical evaluation of the neurolinguistic programming model. *International Journal of Clinical and Experimental Hypnosis* 33(4):310-318.

Dorn F. 1983. Assessing primary representational system (RS) preference for neurolinguistic programming (NLP) using three methods. *Counselor Education and Supervision* 23(2):149-156.

Dowd, E., and A. Hingst. 1983. Matching therapists' predicates: An in vivo test of effectiveness. *Perceptual and Motor Skills,* 57(1):207-210.

Elich, M., R. Thompson, and L. Miller. 1985. Mental imagery as revealed by eye movements and spoken predicates: a test of neurolinguistic programming. *Journal of Counseling Psychology* 32(4):622-625.

Feldman, R., ed. 1992. *Applications of Nonverbal Behavioral Theories and Research.* Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.

Feldman, Robert S., and Bernard Rime, eds. 1991. *Fundamentals of Nonverbal Behavior.* New York, NY: Cambridge University Press.

Graunke, B., and T. Roberts. 1985. Neurolinguistic programming: The impact of imagery tasks on sensory predicate usage. *Journal of Counseling Psychology* 32(4):525-530.

Kostere, K., and L. Malatesta. 1985. *Get the Results You Want—A Systematic Approach to NLP.* Portland, OR: Metamorphosis Press, Inc.

Lewis, D. 1989. *The Secret Language of Success—Using Body Language to Get What You Want.* New York, NY: Carroll & Graf Publishers.

McCabe, D. 1985. Meeting language needs of all types of learners. *Academic Therapy* 20(5):563-567.

Monguio, I., and V., and L. Lippman. 1987. Image formation as related to visual fixation point. *Journal of Mental Imagery* 11(1):87-96.

Pines, M. 1983. Reflets en miroir: facteur therapeutique en groupe-analyse. (Mirroring: Therapeutic factor in group analysis.) *Connexions* 3(41):53-77.

Poffel, S., and H. Cross. 1985. Neurolinguistic programming: A test of the eye-movement hypothesis. *Perceptual and Motor Skills* 61(3):1262.

Richard, M., C. Grover, S., and Davis. 1987. Galef's transfer of information effect occurs in a free-foraging situation. *Psychological Record* 37(1) 79-87.

Sharpley, C. 1984. Predicate matching in NLP: A review of research on the preferred representational system. *Journal of Counseling Psychology* 31(2):238-248.

Stark, T. 1996. Subliminal influence and neurolinguistic programming. World Wide Web address: *http://www.aactwin.com/NLP/random/sublm01.htm.*

Stark, T. 1996. What is a subliminal influence? World Wide Web address: *http://www.aactwin.com/NLP/random/sublm04.htm.*

Ward, N. 1981. Perceptions and rapport. *Psychiatric Journal of the University of Ottawa* 6(3):180-183.

Wertheim, E., C. Habib, and G. Cumming. 1986. Test of the neurolinguistic programming hypothesis that eye movements relate to processing imagery. *Perceptual and Motor Skills* 6(2):523-529.

Wilbur, M., and J. Roberts. 1987. Categorizing sensory reception in four modes: support for representational systems. *Perceptual and Motor Skills* 64(3):875-886.

Yapko, M. 1981. The effect of matching primary representational system predicates on hypnotic relaxation. *American Journal of Clinical Hypnosis* 23(3):169-175.

Zastrow, C., V. Dotson, and M. Kock. 1986. The neurolinguistic programming treatment approach. *Journal of Independent Social Work* 1(1):29-38.

BIODIVERSITY, BANANA SLUGS, AND VIRTUAL REALITY

Ed Moyer
Refuge Interpreter
Minnesota Valley National Wildlife Refuge
3815 East 80th Street
Bloomington, MN 55425

***ABSTRACT**: A little boy became the catalyst who helped frame the format of my 1995 National Wildlife Week school assemblies. My theme focused on biodiversity. I learned that communications technologies are replacing visceral experiences for the very young. The challenge is that environmental interpreters recognize and mitigate this trend.*

***KEYWORDS**: Biodiversity, communications, virtual reality, affective learning.*

The Catalyst

The boy said he was "eight and three-quarters years old." He didn't miss a thing. As we walked through a crystalline landscape, he was often first to see deer scrapes and tracks in the snow, squirrels scurrying through the forest, and woodpeckers sneaking behind snags. When we came into a great blue heron nesting colony on one of the refuge units, he was awed by more than 600 large stick nests visible in tall, leafless trees. The herons' spirit seemed to permeate that place; those nests helped him visualize a raucous phase of their life cycle.

On our walk out, he mentioned he was going to play "Sega" that afternoon with some of his friends. I casually asked him, "If you had a choice between the real world and virtual reality, which would you choose?" After a few steps, he replied: "I'd have to think about that." This honest answer from a sharp little boy scared me. It also prepared me to ask questions later that highlighted pervasive changes in perception occurring today.

Fearful Forums

A few weeks later, I began a series of 23 school assemblies in a dozen schools over a 6-day period from April 13 through April 21, 1995. I spoke with 6,394 K–6 students and 267 teachers. I've been giving National Wildlife Week school assemblies in Missouri and Minnesota for 16 years, but the National Wildlife Federation's theme for 1995, "Home Is Where the Habitat Is," left me cold. Instead, I used it as a springboard to introduce biodiversity to the students: "Biodiversity...What a Wonderful Choice!" This turned out to be an ambitious and foolish thing to try in assemblies, especially for the K–2 crowd.

Developing an assembly is like stringing beads into a necklace. Each bead is special. You try not to drop them. The sequence is important and the focus intense as you thread all the elements together. Then, a few days later, you're standing in front of 350 kids sitting restlessly on a hard-maple gym floor. You interpret the theme. Scanning the audience, you sense when you have them and when you're losing them. You watch their eyes, their posture, and constantly monitor the "fidget factor." You learn. And sometimes, you learn that fascination for stories and experiences doesn't mean they're getting the message. Then your mouth becomes dry. You *know* fear.

So what if I held their attention; did they see the necklace? Were they learning, being provoked to learn, or simply being entertained?

Assembly Format

The 1995 assemblies began with a quotation from Black Elk: "It is the story of all life that is holy and is good to tell, and of us two-leggeds sharing in it with the four-leggeds and the wings of the air and all green things; for these are children of one mother and their father is one Spirit." This was followed by an activity that demonstrated biodiversity within the audience.

An article from *Time* was used as a prop to focus attention on how stone age people might have related to wildlife 20,000 years ago. The students were asked if they thought early people had names for different animals and if wildlife still shapes our thoughts. Student volunteers stood for presettlement biodiversity in the Minnesota River Valley and sat down as once extensive ecosystems were fragmented by settlement. Using a story of life in a handful of soil and an 8-1/2–minute video featuring young children interacting with giant yellow banana slugs, the students were shown that wildlife doesn't have to be big or beautiful to be important.

The stories were compelling and transitions as smooth as I could make them. These assemblies were an extended conversation between someone committed to preserving all life and hundreds of beautiful little people still opening up to it.

Key Questions and a Bad Dream

"Would you rather see a video of banana slugs or experience the real animals? What if I showed you a video about tigers or elephants? Would that be better than real banana slugs? [Show of hands.[How many of you would rather see another video? *(About 60%)* How many would rather see a real live banana slug? *(About 40%)*"

I related experiences with a boy on one of my programs the previous winter. He told me that he was "eight and three-quarters years old...." "If you had the choice between the real world and virtual reality, how many of you would choose virtual reality." *(About 60% chose virtual reality.)*

TV and videos expose students to more biodiversity than was known to previous generations. But it is two-dimensional wildlife and indirect experience. How will "Sega" and virtual reality affect human relationships with the world? If VR is more real than reality, will there be any interest in preserving biodiversity?

(For the older students.) "I've had a nightmare recently; a bad dream. I have dreamed that children like you will come to an Environmental Learning Center 50 or 75 years in the future. They will walk up to an information desk to check out a VR cyber-disk about white rhinos in South Africa or green sea turtles in the Caribbean. Both are endangered species now. They will learn all there is to know about these animals. They will be more real than real. Meanwhile, these animals and many others will have become extinct because everybody knew enough but nobody cared enough."

Reflections

Since the assemblies, I've had time to reflect upon Tilden's sixth principle, his admonition from Anatole France, and the educational theories of Swiss psychologist Jean Piaget. I've given a rambling presentation at the NAI Region V Workshop in Nebraska to 17 people and came across to some as a neo-Luddite technophobe. We are not going to stop computers or advancements in communications technologies. We *are* being challenged by these technologies. If our children are not immersed in viable landscapes when they are very young, will they develop visceral connections to their world? As interpretation and environmental education continue to evolve, programs and curriculums will become more sophisticated. They'll offer provocation and knowledge like seeds for a garden. But for environmental ethics and values to grow, the soil needs to be prepared much earlier than most of us realize. Other cultures have done it and do it. Rachel Carson pointed the way for our's more than 40 years ago with Roger.

The world has lost much of its innocence since Carson wrote *The Sense of Wonder.* Now, virtual reality with other communications and entertainment technologies we barely imagine are being developed at an accelerated pace and will be adopted by children as soon as they are marketed. They'll offer no-sweat alternatives to the natural world; providing instant access and conceptual involvement with little effort. Whether this media orientation will instill values or not will be debated until we have a highly sophisticated society with few ecological values or an enlightened one that respects the implications of biodiversity and our responsibility to maintain it.

Recommendations

Where will interpreters fit in the future? Think about the 60% who have switched off before they've tuned in to the natural world. Take a look at *The Geography of Childhood* by Nabhan and Trimble. Read *EE at the Early Childhood Level,* edited by Dr. Ruth Wilson. Dust off your old copy of *Hug a Tree.* Ponder affective versus cognitive learning. Consider programming for the very young, their parents, and teachers. Let's be catalysts for interaction with the environment and offer avenues to it before 60% of our potential audiences switch off and plug in, perhaps forever.

Acknowledgment

My gratitude to Suzanne Hamann, who introduced me to Piaget and understood how I could ignore his wisdom.

References Cited

Carson, R. 1965. *The Sense of Wonder.* New York, NY: Harper & Row. 8–9, 42–45.

Ehrenfeld, D. 1995. Raritan letter, talking to Heinz. *Orion* 14(1):4–5, 61.

Hughes, R. 1995. Behold the stone age. *Time* 145(6):52–62.

Jaroff, L. 1995. Window on the stone age. *Time.* 145(4):80–81.

Lemonick, M.D. 1995. Ancient odysseys. *Time* 145(6):64–67.

Moyer, E.R. 1989. The habitat game. In: *Proceedings of the 1989 National Interpreters' Workshop.* Minneapolis, MN: Liberty Press, Inc. 93–96.

Nabhan, G.P., S. St. Antoine. The loss of floral and faunal story: The extinction of experience. In: Kellert, S.R., and E.O. Wilson, E.O., eds. 1993. *The Biophilia Hypothesis.* Washington, D.C.: Island Press. 229–250.

Nabhan, G.P., and S. Trimble. 1994. *The Geography of Childhood.* Boston, MA: Beacon Press.

Neihardt, J.G. 1932. *Black Elk Speaks.* New York, NY: William Morrow & Co.

Richie, D. 1995. Beyond single species interpretation. *Legacy* 6(1):12-19.

Rockwell, R.E., E.A. Sherwood, and R. A. Williams. 1983. Hug a Tree. Mt. Rainier, MA: Gryphon House, Inc.

Tilden, F. 1977. *Interpreting Our Heritage.* 3rd ed. Chapel Hill, NC: The University of North Carolina Press. xiii, 47-54.

Wilson, R.A., ed. 1994. *Environmental Education at the Early Childhood Level.* Troy, OH: North American Association for Environmental Education.

Zatz, D. 1988. *Banana, Banana, Banana Slugs.* Oley, PA: Bullfrog Films, 8:24 min. video.

KEY ISSUES FOR INTERPRETATION IN DEVELOPING COUNTRIES

Kye Joong Cho, Graduate Student
Michigan State University
Department of Park, Recreation and Tourism Resources
131 Natural Resources Building
East Lansing, MI 48824-1222

ABSTRACT*: In developed countries, a major emphasis in environmental awareness strategies has been the development of interpretive programs that are based in parks and protected areas. Interpretation is carried out by trained specialists working for organizations with an established interpretive function. In developing countries, interpretive programs in parks are a more recent phenomenon, because of new park systems and more limited financial and human resources. Interpretive programs are needed in developing countries to help foster more favorable attitudes toward conservation, promote sustainable cultural, historical, and natural resources management of benefits to the public by serving as an educational resource. Developing countries look to the United States as a model for interpretive programming, which may or may not be a good idea.*

KEYWORDS: *Interpretation, developing country, protected area, culture, heritage, sustainable, conservation.*

Introduction

Differences in culture, customs, economic conditions, and other factors have led many developing countries to evolve their own tradition for protecting natural resources. The international community has responded by advancing the notion that each country must find its own methods for programming in interpretation. The program must be the best for that country.

Many conservation organizations working in developing countries have begun interpretation programs to encourage a public "conservation ethic" and understanding of the need for sustainable uses of natural, historical, and cultural resources. As interpreters, we stand among those educators who will help shape people's perceptions of the global environment. Most efforts have been focused in the capital cities, rather than in the rural communities adjacent to national parks, historical or biological reserves. Although scientists and tourists may visit these reserves, the local people not only are forbidden to use the land but also are often ignorant of the purpose of the protected areas. In developing countries, this situation has caused resentment, rather than the support and participation necessary for effective management of these natural, historical, and cultural resources. Interpretive programs can be an effective means of addressing this problem. I believe that with this important responsibility comes an obligation to ensure that the perceptions being molded are as complete as possible.

Differences in Circumstances at the Time of Park Development

Most developing countries lack land to support human populations and economic growth. The boundaries of protected areas were drawn around existing populations, instantly converting what were once traditional lifestyles into "illegal activities." These people have few alternatives to their present lifestyles and nowhere else to go. An example would be the countries of Central America. Although they are predominantly rural, their small size contains dense populations. Unable to obtain credit or title to private lands, most of the rural population resorts to migratory (slash and burn) agriculture as its main sustenance activities. These migrations routinely lead to arable lands in protected areas and buffer zones because they are all that are available to these people. With few exceptions, large tracts of underdeveloped land, as in US protected area systems, simply do not exist in the region (Ham 1994).

Some work in the U.S. parks was sponsored by the government to provide employment. The legacy of the Civilian Conservation Corps (CCC) and the park and parkways legislation in the 1930s created whole teams of technicians who planned, designed and built some of the largest projects attempted in our history. Later, when the CCC was phased out, many of these trained and experienced people returned to private industry. The National Park Service and the Forest Service retained enough talent to place them as the top two largest employers of creative technicians in the country (NPCA 1988).

The U.S. model of vast pristine wilderness areas, national parks, and wildlife refuges may not fit Central America, Africa, and Asia, nor, for that matter, much of the developing world. In addition to local circumstances, poverty and environmental degradation are driven by national and international policies. Governments are finding it necessary to overexploit precious natural resources to produce exports and, in turn, foreign exchange. A more complete analysis of the issues surrounding poverty and environmental degradation in the developing world can be found in the Papers and Policy Perspectives of the Worldwatch Institute and the Overseas Development Council, respectively. Both organizations were created to focus on economic, social and environmental issues confronting developing countries, and consequently help point the way to a more sustainable world (DuFour 1996).

The Korean National Park system is different from that of American and Canadian national parks. In the United States, the national park land is almost state-owned. This enables the government to control the preservation of the natural scenery and the construction of tourist facilities. On the other hand, in Korea, only a part of the national park land is province-owned, so the government does not have full control over the preservation of the sites and the consolidation of the tourist facilities. All the government can do, through the Office of Forestry, is control the acts performed on the lands. For example, a landowner or an individual must get permission from the government when he wants to set about some undertakings, such as construction, lumbering, or mining. So the government decides whether or not it will permit an activity after fully considering the effects upon the scenic beauty of the national parks.

The main reason why such a system has been adopted lies in the fact that there is precious little land and high population density which has resulted in the exploitation of every nook and corner of this country, and has in turn made it inevitable that the land has been and will be intensively and multilaterally used. Large sections of the land remain undeveloped and are used as forest preserves.

Countries such as England and Japan, which have circumstances similar to our own, have also adopted systems which are similar to ours. Such systems are beneficial in that they make it easier to designate some places as national parks even before the government has control of them, although at the same time, their weak point lies in the fact that they are not as useful in preserving the scenic beauty of nature.

Cultural Sensitivity

A more complete perception of global environmental issues also requires a more complete understanding of the peoples and cultures involved. It should be discussed whether interpretation is an agent of positive or negative impact within the developing countries. Before any comparisons can be made, however, the concept of interpretation needs some prior definition. An exploration of the different interpretations of the term is undertaken, in which interpretation is broken down into lifestyle conceptualizations of the term. The different cultural definitions of the term are also established. Because all people tend to be ethnocentric, it can be difficult to avoid judging other cultures based on one's own way of life. If the cultural impact of interpretation on both the visitor and the host is examined, one finds that there are both negative and positive impacts for both. For example, it is postulated that traveling to other countries can enhance religious tolerance because it can give the visitor a greater insight into values and beliefs different to those that are his own. But, travel can also undermine traditional beliefs as the host country becomes susceptible to the values and beliefs of the visitor. Similarly, the increased prosperity that tourism brings to a region can also lead to a reduction in religious attendance within the host population. A case study examines the impact of cultural tourism on the belief systems exercised by the people of Barli (Bagus 1993).

A Personal Experience

Twelve years ago on a visit to countryside, Korea, I stayed overnight at a minor farm that had been worked by the same family for hundreds of years. When my host, the farmer, took me on a tour of the guest house, I was astonished. Its previous occupant had been the farm's last farmer, who had died suddenly in early 1950. My host's grandfather, not needing the house, simply shut it up. Nothing was removed or altered. Even the newspaper the worker had been reading on the morning of his death lay folded on the breakfast table by his tea cup. From time to time the family would clean and maintain the house, and occasionally they opened it for a curious visitor. But essentially the house had remained locked up in another time. The family could have turned the factor's (worker's) house into a superb example of what one could call an "atmosphere" museum, a building that is popular because it effectively elicits thoughts and feeling from the visitor. Now and again they had considered this idea, but always rejected it, preferring to preserve the home intact as a potential historic house museum for Koreans in the 21st century. Family members were well aware of the importance of "collecting today for tomorrow" and were proud of the patience and foresight they had demonstrated for over half a century.

The farmer, a veteran of the summer wars with Japanese and North Korea, succinctly explained their philosophy: "Life here is often short, so our tradition needs to be long." When this farmer's grandchildren finally decide to open their worker's house as a museum, I do not know what interpretive themes or modes they will select as most appropriate for helping visitors understand the building's meaning. Perhaps it will be living history, or historical simulation, the medium that has intrigued so many interpreters in the latter end of the 20th century. Or maybe it will be a medium perfected in the future—say, holography.

Who can say? What is important is that a historically and culturally significant institution, the small family farm, will be remembered, even celebrated. My concern is not how that building and the way of life it represents will be interpreted, but rather that someone had the foresight to set aside something that they recognized as potentially valuable for future generations. I do not need to belabor this notion to interpretive naturalists. You understand and appreciate the values of preserving and interpreting our natural heritage. What I would like to advocate is the planned preservation of historic sites (buildings, farms, neighborhoods, small towns, etc.) characteristic of our recent stage of civilization, a period in human evolution now being swept aside by what Alvin Toffler calls the "third wave," that technological, cultural, economic, political, and social revolution we all recognize is engulfing us.

Selling Parks to the Public Economy

Many towns in the developing countries are embracing heritage tourism in order to stimulate economic growth and enhance quality of life, hoping to attract new business and industry. Communities seek anthropologists, scientists, and interpreters' services as consultants on heritage tourism development projects; however, critics within the discipline have voiced doubts about the intellectual and ethical integrity of such work. This is especially important in the Asia-Pacific region where the competition for the international tourism markets is fierce and where new product development is one of the tools used to capture a larger market share. The alternatives now being endorsed are usually so-called "sustainable" tourist destinations, of which village based tourism is one form. This form of tourism is characterized by being sensitive and responsive to the needs of the environment in which it operates. Concerning this trend, critics accuse anthropologists, scientists, and interpreters in developing countries of undermining rather than sustaining the vitality of genuine cultural expression. It can be expected that cultural tourism projects make the tourist ethnographic observers as communities construct or reconstruct cultural meanings for themselves and for public consumption. Particular emphasis was placed on the interpretation of the concepts in relation to developing countries, the world, and especially to the host country.

Ecotourism: Connections Between Tourism and Conservation Goals

Ecotourism is defined as responsible travel to natural areas that conserves the environment and sustains the well-being of local people. Natural history travel has always existed, but there has been a significant increase in this type of travel since 1980 (Wood 1993). The need to disseminate guidelines designed to protect fragile ecological and cultural settings is now greater than ever. The objectives of ecotourism vary but most are targeted at visitors to natural areas, parks and protected areas,and are about creating and satisfying a hunger for nature, about exploiting tourism's potential for conservation and development, and about averting its negative impact on ecology, culture and aesthetics. Conservation managers recognize the enormous relevance of tourism and are also aware of the many dangers that poorly managed or uncontrolled tourism can cause to the world's natural and cultural heritage. If it is accepted that ecotourism is about principles of balancing tourism, conservation and culture, its role is limitless. Well-designed guidelines must take the many types of visitors into account. Those that address visitor services are also beneficial. Guidelines should target the professionals involved in delivering information to visitors and can best be developed by professional associations.

From the outset, proponents of tourism in developing countries have, consciously or not, put great hope in interpretation, and gradually the linkages between tourism in developing countries and interpretation began to be developed. This discussion examines the potential benefits of linking interpretation and tourism in developing countries and assesses a number of the pitfalls or difficulties which are involved. The potential benefits include improved visitor management, local economic and environmental gains and fuller community involvement. Among the several pitfalls of linking interpretation and tourism in developing countries which are considered are the dangers of over-interpretation, intrusion, creating "quaint" tourist landscapes, and elitism. Interpretive programs which enhance tourists' experiences may serve an important marketing function, thereby augmenting economic development. This program in developing countries can directly benefit local populations in other ways. For example, what an illiterate farmer and his family learn from a skilled interpreter could save, extend, or substantially improve their lives, at the same time contributing to the protection of the area.

In developing countries, interpretive programs aimed at local people may not always lend themselves to tradition, and customary distinction between natural resources extension and park interpretation may even be counterproductive. Clinging too tenaciously to a model which separates them may severely limit the contributions we might otherwise make (Ham 1994).

How to Improve on the Influence and Advice Given to Developing Countries

For more than a century, it has been the policy and practice of the U.S. government to cooperate with other nations to preserve the natural heritage through sharing concepts and expertise. Associated with the responsibility of maintaining the integrity of heritage properties under the jurisdiction of central governments, most nations have developed domestic and international networks for sharing important and related information, scientific knowledge, and technical skills (Marilyn 1987). In 1950s and 1960s, the U.S. NPS landscape architects have served many times for international technical assistance. The complexity of development issues and the diversity of world cultures indicate the need for education which promotes a sense of global community. This trend has been evidenced by development of interpretive programs based in parks and protected areas. In some developed countries, these efforts typically represent the continuation of a historical tradition of interpretation, and are carried out by trained specialists working for organizations with an established interpretive function. Many developing countries lack this tradition, financial resources, social awareness, human resources, and techniques (Ham 1994).

Developing countries sometimes accept the U.S. model without examination because of lack of information and technicians. When they accept the U.S. model of interpretation it seems it does not work. When the U.S. model does not work well in the country, that country's interpreters usually blame the U.S. model and conclude that interpretation itself is inappropriate, rather than thinking how the model should have been adapted. A model comprises characteristics attached to an aspect of process or product by which it can be evaluated. Modelization is the development and adaptation of models. When they are formulated, models are not usually the product of a single country, but represent the thoughts and ideas of a group, leavened with the knowledge and information which are currently available. Models which do not meet certain basic requirements become a hindrance rather than an aid to progress.

Models must not only be correct, accurate, and precise in requiring no more and no less than what is needed for satisfactory results, but they must also be workable in the sense that their usefulness is not nullified by external conditions. Models should also be acceptable to the people who use them. If they are not acceptable, they cannot be considered to be satisfactory, although they may possess all the other essential characteristics. For this reason, interpreters in developing countries, exercising their unique blend of information transmission, knowledge of basic information and visitor needs, the ability to tailor activities to specific situations and locations, to use dramatization, and above all, a special sense of the importance of that which they interpret, are vital if the world's population is to retain or regain an appreciation of the intangible aspects of life. Interpretation in developing countries is an ongoing issue that interpreters in these countries will most likely face at some time or another during their career. Understanding their own culture, choosing to understand the other country, and using communication and interpretive skills cand make the difference between satisfied and unsatisfied visitors.

References Cited

Bagus, I.G.N., and J. Spillane. 1993. Cultural tourism and religious belief systems. In: *Universal Tourism Enriching or Degrading Culture?* Gadjah Mada University Press.

Blangy, S., and M.E. Wood. 1993. Developing and Implementing Ecotourism Guidelines for Wildlands and Neighboring Communities. North Bennington, VT: Ecotourism Society.

Dufour, Marilyn Berry. 1996. The global perspective: Avoiding pitfalls in perception. *Legacy* 7(3).

Ham, Sam H., and Richard A. Meganck. 1994. Environmental interpretation in developing countries: Crossing borders and rethinking a craft. *Legacy* Jan/Feb 1994.

Korea National Parks Authority. 1995. *National Parks of Korea.*

Planning and Public Involvement. 1988. *Constituency Building for the Parks.* Vol. 6. National Parks and Conservation Association.

THE ROLE OF EDUCATION IN CONTROVERSIAL RESEARCH IN NATIONAL PARKS

Larry Points
Chief of Interpretation
Assateague Island National Seashore
7206 National Seashore Lane, Rt. 611
Berlin, MD 21811

Jay F. Kirkpatrick
Director of Science and Conservation Biology
Zoo Montana
P.O. Box 80905
Billings, MT 59108

ABSTRACT: *Education programs were incorporated in a controversial wild horse contraceptive research program on Assateague Island National Seashore. Purposes, goals, and methodologies were clearly articulated to the public through park programs and the national media. This effort prevented misunderstandings by the public and contributed to the development of a successful management tool.*

KEYWORDS: *Controversy, education programs, management tools, wildlife research.*

Introduction

All too often, research projects carried out on public lands are viewed only in terms of success or failure and those outcomes are in turn viewed only in the context of successful or unsuccessful science. In reality, the success of important research on public lands, and in national parks in particular, results from a combination of good science, cooperation between the agency and the research team, clear understandings by both agency and team about the tasks and roles for which each are responsible, and the complex sociology of research team, agency, and visitor perception.

In 1986, research was initiated in Assateague Island National Seashore (ASIS) with the goal of managing the wild horses inhabiting the island through the use of fertility control. The decision to test fertility control as a means of controlling the ASIS wild horse pod 1996 demonstrated that (1) the vaccine's contraceptive effects were better than 95% effective, (2) the contraceptive effects were reversible after three to four years of treatment, (3) after seven years of treatment some mares ceased ovulating, suggesting a long-term effect upon the ovary, and (4) a population effect could be achieved (Kirkpatrick et al. 1992, 1995). In order to carry out the physiological studies, the research team developed non-capture methods with which to detect ovulation, monitor ovarian endocrine function, diagnose pregnancy, and detect fetal loss, all by means of urinary and fecal hormone analysis.

Thus, the public was faced with the vision of scientists firing darts containing some sort of untested contraceptive drug at horses, collecting urine and fecal samples from horses (on the beaches, alongside the park road, and even within campgrounds), and the perception of the popular wild horse herd being eliminated or at least reduced to some smaller number. Herein was found the potential for adverse and vocal public reaction.

The Education Program

A retrospective view of the ASIS wild horse contraception study provides a picture of a research effort that is wholly unique and almost without precedent. This research project was successful in achieving all its original goals and the reasons for this success go well beyond the science and technology of the research itself. Perhaps the single largest reason for success was the effort put forth by ASIS in developing an education program that fully informed the public of the reasons for and the nature of the research. This educational effort incorporated many different elements.

Role of the Research Team

At the initiation of the project it was made clear by ASIS staff that as much research as possible, and in particular the actual darting of horses, was to be conducted out of the public's view. It was also recognized that this was not always possible. Thus, when work had to be conducted in view of the public, the visitors were told of the exact nature of the research, reasons for that research and the ultimate goal, i.e., a target population of 150 horses. The research team also met with the park's interpretive staff, providing annual updates on research project, providing props, such as expended darts, for educational purposes, and taking interpretive staff into the field during actual darting and urine collection operations.

It is often the case in national parks that researchers in the field will have more interaction with the public than the interpretive staff. As such, the research team becomes an important educational resource. The darting of a horse or the collection of a urine sample always evoked curiosity and questions by the visitors and the research team took the time to explain everything in a clear and comprehensive fashion, even to the point of slowing down their own work. Finally, the research team published all work in respected peer-reviewed scientific journals on a regular and timely basis, in order to provide the requisite scientific validity of the research.

A very important factor in the cooperation by the research team and its execution of educational efforts was a strong NPS background by the research team. Invasive wildlife research is a difficult task anywhere, but particularly so in national parks. Interaction between visitors and the research team are inevitable and these experiences are not always positive. Visitors often resent the special access enjoyed by researchers, or the nature of the research itself. Researchers on the other hand often resent interference with their work, intended or unintended, by visitors. Previous employment by the team leader, as a ranger (Rocky Mountain National Park) provided a frame of reference for the research team that placed the visitor as the "owner" of a public resource and the research team as "guests." The research team viewed itself first as representatives of ASIS and the NPS, and second as researchers. It was understood that all actions by the research team reflected upon the NPS (Kirkpatrick 1995).

Role of the NPS

The ASIS Interpretive staff took several steps to insure that the public was fully informed. First, campfire talks described the research with detail and accuracy that could only be provided after firsthand experience with the research team. Second, ASIS produced and distributed at the Barrier Island Visitor Center, a concise brochure which discussed both the methodologies and management goals of the research project. Third, an attractive poster, describing the research, the goals and the results of the research was produced and prominently displayed in the visitor center. Fourth, a videotape of the actual darting procedure was made by the ASIS staff for educational purposes. Fifth, media requests for coverage, which in this case included local newspapers and television stations, national network TV (ABC, CBS, and ESPN-2), National Public Radio, and large newspapers and magazines (*Washington Post, New York Times, Time, Newsweek*) were all greeted enthusiastically by the ASIS staff and provided with whatever logistical support was necessary. Sixth, ASIS staff worked closely with a statewide public TV station to produce an excellent documentary of the research project which was ultimately broadcast to the public on many occasions. A copy of this program is now shown regularly in the visitor center's theater. Finally, the NPS regional office (Mid-Atlantic) published a NPS Scientific Monograph on the history of the project (Kirkpatrick 1995).

Conclusions

The result of this educational effort by both the ASIS and research personnel was a potentially controversial project that never once came under public criticism. Over the ten year course of the work, the public really had only two major questions when confronted with the research project. Is the NPS trying to eliminate the horses from Assateague, and are the horses being hurt in the conduct of this research? The educational efforts by ASIS made it clear that this was an effort to responsibly, and humanely, test a management option to control the horse population in order to protect the island's other resources, as well as the health and well-being of the horses themselves. An ancillary but important benefit of the educational efforts was support by numerous animal welfare organizations and even several animal rights groups, as demonstrated by many positive articles in the organizations' newsletters. In two cases, moderate financial support from two large animal protection groups aided the ASIS research. The willingness of the NPS to seek a humane, as well as an effective, solution generated additional educational efforts by these organizations through their publications, and further goodwill between the public sector and the NPS.

The value of these educational efforts was never more apparent than when the environmental assessment was carried out by the NPS for the initiation of management-level contraception of the ASIS herd. An assessment which recommended fertility control for the primary management tool for controlling the nation's most loved, adored, protected and visible wild horses resulted in only six public responses, five of which were wholly positive, and of course, "findings of no significant impact."

Collectively, these educational efforts were significant factors that made the ASIS contraceptive project so successful. The implications of this success go well beyond ASIS. Today, with several other wildlife contraceptive projects already in progress in national park units (white-tailed deer on Fire Island National Seashore; feral donkeys on Virgin Islands National Seashore; horses on Cumberland Island National Seashore) and numerous other similar projects on non-NPS land, the design of the research follows the "Assateague model" with regard to the educational strategies. The history of the ASIS wild horse fertility control project suggests that controversial research can be carried out in national parks if adequate attention and effort is given to educating the public.

References Cited

Kirkpatrick, J.F. 1995. *Management of Wild Horses by Fertility Control: The Assateague Experience.* Scientific Monograph NPS/NRASIS/NRSM-95/26. Denver, CO: National Park Service. 60 p.

256

Kirkpatrick, J.F., and J.W. Turner, Jr. 1985. Chemical fertility control and wildlife management. *BioScience* 35:485-491.

———. 1991. Reversible fertility control in non-domestic animals. *Journal of Zoo and Wildlife Medicine* 22:392-408.

Kirkpatrick, J.F., I.K.M. Liu, and J. W. Turner, Jr. 1990. Remotely-delivered immunocontraception in feral horses. *Wildlife Society Bulletin* 18:326-330.

Kirkpatrick, J.F., I.K.M. Liu, J.W. Turner, Jr., and M. Bernoco. 1991. Antigen recognition in mares previously immunized with porcine zonae pellucidae. *Journal of Reproduction and Fertility* Suppl. 44:321-325.

Kirkpatrick, J.F., I.K.M. Liu, J.W. Turner, Jr., R. Naugle, and R. Keiper. 1992. Long-term effects of porcine zonae pellucidae immunocontraception on ovarian function in feral horses (*Equus caballus*). *Journal of Reproduction and Fertility* 94:437-444.

Kirkpatrick, J.F., R. Naugle, I.K.M. Liu, M. Bernoco, and J.W. Turner, Jr. 1995. Effects of seven consecutive years of porcine zonae pellucidae contraception on ovarian function in feral mares. In: *Biology of Reproduction Monograph Series* 1:411-418.

Kirkpatrick, J.F., J.W. Turner, Jr., I.K.M. Liu, and R.A. Fayrer-Hosken. 1996. Applications of pig zonae pellucidae immunocontraception to wildlife fertility control. In: *Prospects of Zona Pellucida Glycoproteins for Contraception. Journal of Reproduction and Fertility* Suppl. 51. (In press.)

Liu, I.K.M., M. Bernoco, and M. Feldman. 1989. Contraception in mares heteroimmunized with pig zonae pellucidae. *Journal of Reproduction and Fertility* 85:19-29.

Research

Reading these grand mountain manuscripts displayed through every vicissitude of heat and cold, calm and storm, upheaving volcanoes and down-grinding glaciers, we see that everything in Nature called destruction must be creation—a change from beauty to beauty.

—John Muir, 1869

RESEARCH: A FOUNDATION FOR INTERPRETATION

Marcella Wells
Assistant Professor
Department of Natural Resource Recreation and Tourism
Colorado State University
Fort Collins, CO 80523
(970)491-5358

It is often suggested that the majority of our learning takes place outside the classroom—outside the four walls of the traditional schoolroom. This idea has been the engine of interpretation for decades. It is what drives many interpreters to spend countless hours developing a better story, finding a better metaphor, writing a better label, or building a better exhibit to teach the complex and often intangible phenomena of our natural and cultural environments. It is what drives many interpreters to spend their career trying to understand the families, kids, scouts, seniors, and tourists who visit our parks, forests, nature centers, and the multitude of other informal learning venues. And, just as any engine is only as good as the fuel used to run it, the quality of our profession is only as good as the research used to fuel it. For it is this research—about visitors, about the effectiveness of exhibits and programs, and about new approaches to learning—that provides the foundation of our interpretive initiatives.

As associate editor of this year's *Proceedings* Research Section, it was my intent to help the Education and Research Committee shape the role of research as we move toward increased scholarship and professionalism in the industry. Next year, we will inaugurate the *Journal of Interpretation,* and it will become increasingly important for us to communicate clearly and carefully about the research we conduct which supports our decisions as resource managers, which provides the foundation of our interpretive programs, which helps us understand our visitors, and which helps us work in partnerships to effectively pursue informal education.

This year the review team examined several papers for their relevance, scholarship, and implications to the body of science which supports the interpretive profession. Specifically, each paper was reviewed for its ability to articulate a clear purpose, an appropriate conceptual foundation, reasoned methods, understandable results, and relevant implications. Perhaps the most rigid criteria were the relevance of the work to the field of interpretation and the implications of the research to field interpreters and other front-line practitioners. The research papers you will read in this section are the result of this review process and are those selected by the team which best exemplify the philosophy of the Education and Research Committee.

It is likely that the review process and proceedings content for the research track will change next year with the introduction of the *Journal of Interpretation* (see Appendix for information about the new *Journal*). However, the *Journal* will endeavor to continue a tradition of excellence in research as it supports the discipline and practice of interpretation.

EVALUATION OF NATIONAL WILDLIFE REFUGE INTERPRETATION

Mary Grace Carson, Outdoor Recreation Planner
U.S. Fish and Wildlife Service
Rocky Mountain Arsenal National Wildlife Refuge
Commerce City, CO 80022

Douglas M. Knudson, Professor
Purdue University
Department of Forestry and Natural Resources
West Lafayette, IN 47907

ABSTRACT: *Importance-performance analysis was used to evaluate the interpretive facilities and services of the National Wildlife Refuge System. Completed questionnaires came from 380 visitors to at least one of seventeen participating refuges. Overall, visitors were satisfied with their visit to the refuges; virtually all had used some of the interpretive facilities. Information booths and availability of staff were two areas needing improvement. Visitors wanted more, updated information and staff available to answer their questions.*

KEYWORDS: *Visitor satisfaction, national wildlife refuges, importance-performance analysis, interpretation.*

Introduction

The U.S. Fish and Wildlife Service (USFWS) has a responsibility to provide opportunities to the public for utilizing, learning about, and enjoying the nation's wildlife as well as the responsibility to protect the numbers and diversity of wildlife in this nation (USFWS 1991). Under the Public Use Management section of the USFWS refuge manual (1985), all USFWS refuges open to the public are to address and consider opportunities and activities that meet the needs of the visitors. They are to provide visitors with recreational and educational activities that are compatible with the primary purpose of refuges—to protect wildlife habitat. The USFWS states that "interpretation is an integral part of refuge management and the perpetuation of wildlife/wildland resources" (USFWS 1985).

Of a total of 503 national wildlife refuges across the nation, 376 provide recreational and educational activities of varying quality and quantity (USFWS 1994). According to a report on secondary uses of national wildlife refuges by the U.S. General Accounting Office (1989), 73% of refuges provide environmental education opportunities and 66% of refuges provide interpretive tours. Although these services exist, most refuges do not evaluate their interpretive programs, nor do they know much about the visitors participating in these programs.

Many interpretive facilities and programs exist at national wildlife refuges. The USFWS has developed or helped to develop the following educational guides and programs: the Federal Junior Duck Stamp Program, the Water Resources Poster Series, Habitat/Issue Packs, Habitat Fun Pack, Wetlands and Wildlife: The Alaska Wildlife Curriculum, the Salt Marsh Manual, Schoolyard Habitat Workshops, plus sponsorship of Project WILD and Aquatic Project WILD. The agency has also published and produced several educational readers and videos (Slattery 1994). Specialty programs such as "Scientist in the Schools," "Wings Over the Platte," and "Biologist on Board" are educational programs currently being used in the USFWS (USFWS 1992).

Many refuges have visitor centers with interpretive exhibits and programs. Based on a survey of 54 refuges (Anderson and Knudson 1995), 69% have a visitor center or contact station and 65% offer kiosks or wayside exhibits. Interpretive trails and auto tour routes are provided by 50% and 41%, respectively, of the sampled refuges. Interpretive programs or talks focus on school groups or other organized groups. Only 35% of the refuges provide interpretive programs for the general public, whereas 85% provide programs for school groups and 78% provide programs for other organized groups.

However, as previously mentioned, most interpretation on refuges is not systematically evaluated. Every five years the USFWS conducts the National Survey of Fishing, Hunting, and Wildlife-Associated Recreation (Fisher and Grambsch 1989). This survey collects data on hunting, fishing, wildlife observation, wildlife photography, and wildlife feeding. While this is useful information for resource managers, it does not identify characteristics of refuge visitors nor does it collect any information on interpretation.

Some refuges use a comment card to evaluate and make improvements in their programs. Most refuges, however, do not carry out any type of visitor-based evaluation. Thus they lack systematic evaluation process, which policy and program development theory suggests is an integral part of making decisions in any agency. Evaluation is needed to determine the quality, effectiveness, and efficiency of the investments in interpretive facilities and services (Wright et al. 1991, Mengak et al. 1986, Schultz et al. 1985).

This study provides a one time evaluation of interpretation on 17 refuges in the Prairie-Mountain Region of the USFWS. It was done to gain insight into the people visiting national wildlife refuges and their satisfaction with the interpretive facilities and services available.

Methods

A visitor survey was administered on seventeen national wildlife refuges in Region 6 of the USFWS from February 1, 1995, through August 31, 1995. The Region 6 Office in Denver administers refuges in the following states: Colorado, Kansas, Nebraska, North Dakota, South Dakota, Montana, Utah, and Wyoming. Kansas had no participating refuge.

The questionnaire design evolved through suggestions of recreation professors, refuge managers, and outdoor recreation planners. Twenty questions were asked; 18 were close-ended questions. Data were collected on use of facilities, participation in activities, importance and performance of facilities and activities, suggestions for facility/activity development, perceived learning, past visitation, previous exposure to interpretation elsewhere, distance traveled to site, group characteristics, and sociodemographic variables.

A total of 380 visitors responded, representing an overall response rate of 25%. Data analysis used descriptive statistics and nonparametric statistics including the Kruskal-Wallis test. Importance and performance of facilities and activities were measured using importance-performance analysis, based on the visitors' rating of 27 refuge attributes on a seven-point Likert-type scale. In addition, differences in visitor satisfaction were examined for each of the sociodemographic and visitor group characteristics.

Results

Facilities available to most refuge visitors are a visitor center or contact station, auto tour route, observation tower, information kiosks, hiking/interpretive trails, picnic area, and boat launch. The auto tour route was by far the most used visitor facility with 71% of the respondents using it. The visitor center and the hiking/interpretive trails tied for second, each with 54% of the respondents using them. In terms of time spent using individual facilities, the auto tour route ranked highest with an average of 86 minutes being spent on the auto tour. An average of 62 minutes was spent on the hiking/interpretive trails (Table 1).

Using the reported times spent at each facility, a Kruskal-Wallis test and Duncan multiple range test were performed to determine if significant differences existed between visitors' use of the facilities. There were four levels of significant differences by time spent at facilities. The first level consisted of the auto tour route and hiking/interpretive trails. The second level was the time spent at the picnic area. The third level consisted of visitor center, boat launch, and observation tower times. And the last level was the time spent at the information booths.

Activities engaged in by the wildlife refuge visitors were fishing, wildlife observation, boating, school visits, nature study, sightseeing, special events, hiking/walking, photography, watching films or videos, and exhibit study. Wildlife observation was the leading activity of the respondents, with 84% spending time watching wildlife. Exhibit study, photography, and sightseeing followed with 38%, 35%, and 34% of the respondents participating, respectively.

Table 1. Facility use in percent of respondents and time spent there in minutes

Facility	Percent of respondents who used the facility	Mean time spent at the facility in minutes
Auto tour route (13)*	71	86
Hiking/interpretive trails (11)	54	62
Visitor center (14)	54	21
Information booths (16)	36	9
Picnic area (5)	22	43
Observation tower (6)	15	18

*Number of the 17 participating refuges offering the facility.

Fishing was the leader in terms of amount of time spent on the activity. Respondents spent an average of 276 minutes fishing (Table 2). Respondents spent an average of 165 minutes watching or looking for wildlife.

Kruskal-Wallis test and Duncan's multiple range test were done for the time spent doing each activity. Visitors spent significantly less time on photography, watching films and videos, and exhibit study than on all other activities. Fishing and wildlife observation ranked highest in amount of time spent by visitors. All of the other activities fell into a middle range of time from 58 to 150 minutes.

Overall, visitors were very satisfied with their visit to the participating refuges. None of the performance means was below 3.5 on a scale of one to seven—one being excellent, seven being terrible (Table 3). However, when placing the importance and performance means on the importance-performance grid, attributes which could be improved were recognized with the crosshairs set at 3.0 for importance and 2.5 for performance (Figure 1).

The following attributes fell into the "Keep Up The Good Work" quadrant: length of trails and tour routes, maintenance of trails and tour routes, cleanliness of restrooms, nature/hiking trails, visitor center, auto tour route, sightseeing, nature study, photography, wildlife observation, opportunity for solitude, availability of information, convenient visitor center hours, helpfulness of refuge staff, and observability of wildlife.

Observation towers and talks/tours were located in the "Possible Overkill" quadrant. While visitors were very satisfied with both of these attributes, they felt they were not as important as other attributes.

The following attributes fell into the "Low Priority" quadrant: picnic area, films/videos, boat launch, special events, volunteer programs, school/group visits, exhibit study, and availability of staff. Visitors felt these attributes ranked lower in importance and performance than other attributes.

Availability of restrooms and information booths were the only two attributes located in the "Concentrate Here" quadrant. Improvements could be made in these two areas.

Differences in visitor satisfaction were examined for each of the sociodemographic and visitor group characteristics. Many differences were found, but the most interesting finding was that visitors traveling in organized groups were more satisfied with their visit than was any other type of visitor.

One of the objectives of the USFWS is to increase the public's awareness, understanding, and appreciation for all parts of the natural environment. In addition, they want the public to gain an understanding about wildlife management and the national wildlife refuge system (USFWS 1985, USFWS 1991). Two-thirds of the respondents in this survey felt that they had learned something on their visit to the refuge. When stating what they had learned, 37% of the learning was based on observations they had made and not on interpretive materials presented by the refuge. Other learned items fell into five categories: information on animal biology/ecology (33%), wildlife management techniques (12%), information about the national wildlife refuge system (9%), historical facts about the refuge (6%), and rules and regulations (3%).

Of the total respondents, 55% made suggestions for developments on the refuge. The most frequent response was that visitors wanted viewing areas or observation blinds instead of, or in addition to, observation towers. Other developments frequently mentioned were more trails, restrooms, and more or updated information in the informa-

Table 2. Activity participation reported in percent of respondents participating and time of participation in minutes

Activity	Percent of respondents participating	Mean time of participation in minutes
Wildlife observation	84	165
Exhibit study	38	15
Photography	35	53
Sightseeing	34	99
Nature study	21	127
Fishing	6	276
Hiking/walking	3	56
Watching films/videos	3	22
Special events	2	89
School/group visit	2	150
Boating	1	120

Table 3. Importance and performance means for all participating refuges

Attributes	Grid #	Importance	Performance	Quadrant*
Length of trails & tour routes	1	2.17	2.27	I
Maintenance of trails & tour routes	2	2.09	2.34	I
Picnic area	3	3.81	2.63	III
Availability of restrooms	4	2.38	2.69	IV
Cleanliness of restrooms	5	2.54	2.29	I
Interpretive/hiking trails	6	1.84	2.17	I
Films, videos	7	4.53	3.15	III
Information booths	8	2.87	2.63	IV
Visitor center	9	2.87	2.21	I
Observation tower	10	3.73	2.46	II
Auto tour route	11	2.52	2.27	I
Boat launch	12	5.69	2.89	III
Special events	13	4.99	3.10	III
Volunteer programs	14	4.46	2.85	III
Sightseeing	15	2.20	2.05	I
Nature study	16	1.90	2.09	I
Photography	17	2.64	2.09	I
School/group visit	18	4.55	2.98	III
Wildlife observation	19	1.29	1.90	I
Talks or tours	20	4.23	2.33	II
Exhibit study	21	3.82	2.67	III
Opportunity for solitude	22	2.20	2.03	I
Availability of information	23	1.98	2.40	I
Convenient visitor center hours	24	2.82	2.25	I
Helpfulness of staff	25	2.40	2.06	I
Observability of wildlife	26	1.46	2.04	I
Availability of staff	27	3.24	2.57	III

*I.—Keep Up The Good Work
II.—Possible Overkill
III.—Low Priority
IV.—Concentrate Here

tion booths. Approximately 9% of those responding to the question said they did not want any more developments.

Discussion and Conclusions

The goal of this study was to evaluate interpretation in the National Wildlife Refuge System (NWRS), looking at its use on refuges and determining if the interpretive facilities and services provided are meeting the needs of the visiting public. This evaluation focused on visitors' self reporting of expectations (importance) and how well the interpretive facilities and services met those expectations (performance). Personnel and cost limitations plus the logistics of visitation patterns prevented the use of a more intensive interview and pre/post-test design.

Facility Use/Activity Participation

All heavily used facilities were interpretive facilities. The most used facilities were, in order: auto tour route, hiking/interpretive trail, visitor center, and information booths. Visitors who used the auto tour indicate that wildlife observation was the main activity, followed by exhibit study. They suggested that the self-guiding interpretive leaflets used on the auto tour route could use improvement. One possibility would be to use the leaflets in conjunction with an audio cassette tour to capture more of the visitors' interest or attention. It would also enable them to use the interpretation on the auto tour without being distracted from observing wildlife.

Importance and Satisfaction

Overall, the visitors to the national wildlife refuges were satisfied with the attributes they considered important. Even though all of the attributes ranked fairly high in performance, a few areas needing improvement were identified. Attributes thought to need improvement were: picnic areas, availability of restrooms, films/videos,

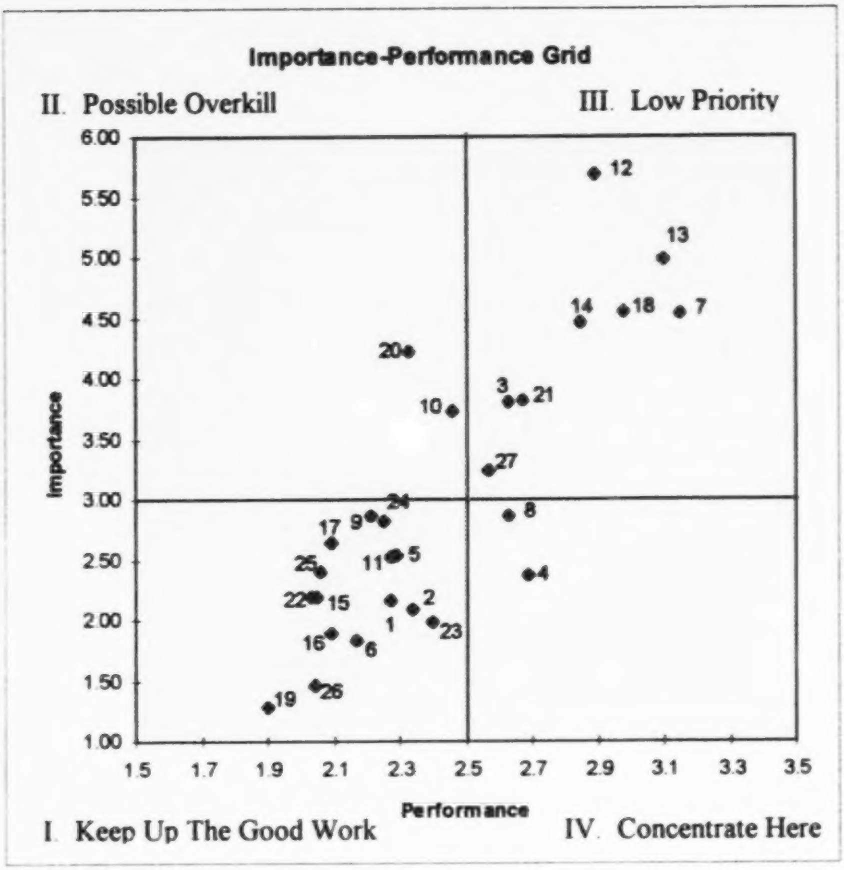


Figure 1. Importance-performance grid for all participating refuges.

information booths, boat launch, special events, volunteer programs, school/group visits, exhibit study, and availability of staff.

With the boat launch, special events, volunteer programs, and school/group visits, visitors simply indicated that they would like more available but did not make any suggestions for improvements to the current ones.

Some visitors suggested updating films/videos, information booths, and exhibits. The information booths were a common point of concern among most of the visitors. Many of them expressed the desire to have more information available. They wanted information on what animals and plants are common to the refuge and on recent animal sightings. The visitors' request for more/updated information suggests that maybe the USFWS needs to update their information more frequently than the norm of every eight to ten years.

Availability of staff was one attribute which received a few comments. However, those who did comment did so strongly. One refuge visitor said she was in and out of the visitor center before a staff member ever realized she was there. Refuge talks or tours should not necessarily be offered to every visitor who walks through the door, but someone should be available for questions that visitors might have. Several visitors made the comment that they had questions to ask about the refuge but could not find anyone with the time to answer them. However, most visitors were satisfied with the availability of staff.

Even though talks/tours, special events, volunteer programs, films/videos, school or group visits, and boat launches fell into the low importance quadrants, they should still be offered. All of the facilities or activities currently offered have importance to some refuge visitors.

One interesting finding was that organized groups ranked every attribute high in performance. Organized groups usually schedule visits and receive personal attention from refuge staff. Personal attention would appear to increase the visitors' satisfaction with every aspect of their visit. Yet, at current staffing levels refuge personnel do not have the time to give every refuge visitor a tour of the refuge. However, having a staff member on hand to answer visitors' questions might create the personal attention necessary to improve the visitors' satisfaction with their visit.

Awareness and Understanding of the USFWS and Natural Resources

Approximately two-thirds of the visitors reported they learned something new on their visit. However, a little over one-third of what was learned was based on observations by the visitor and not on interpretive materials presented by the USFWS. Visitor comments suggest that the USFWS might try a little harder to reach their visitors, especially about the importance of the national wildlife refuge system.

Only 9% of what was learned was about the national wildlife refuge system, its function and importance. This could have been due to the fact that over 50% were repeat visitors. They might already know about the NWRS and therefore did not learn anything new about it. In any case, it is very important that the USFWS communicate its importance to the public to gain support for its existence. As budgets and agencies are cut, it will benefit from public support. The NWRS's survival may depend upon the approval and backing of its taxpaying visitors).

References Cited

Anderson, M.G., and D.M. Knudson. 1995. Use of environmental education and interpretation on national wildlife refuges. Paper presented at the 57th Midwest Wildlife Conference, Detroit, MI, December 5, 1995.

Fisher, W.L., and A.E. Grambsch. 1989. Development, use, and future of the national survey of fishing, hunting, and wildlife-associated recreation. *Wildlife Society Bulletin 17: 538-543.*

Mengak, K.K., F.D. Dottavio, , and J.T. O'Leary. 1986. Use of importance-performance analysis to evaluate a visitor center. *Journal of Interpretation* 11(2):1-13.

Schultz, B.L., G.W. Mullins, and J.L. Heywood, J.L. 1985. *An Importance-Performance Study: A Research Report to the Metropolitan Park District of Columbus and Franklin County, Ohio.* Columbus, OH: The Ohio State University. 43pp.

Slattery, B.E. 1994. Wetland education in the U.S. Fish and Wildlife Service. *Wetland Journal* 6(2):4-5.

U.S. Fish and Wildlife Service. 1994. *National Wildlife Refuges: A Visitor's Guide.* Washington, D.C.: U.S. Department of Interior.

———. 1992. The White Paper: *Outreach in the Fish and Wildlife Service.* U.S. Fish and Wildlife Service document.

———. 1991. *Vision for the Future.* Washington, D.C.: U.S. Department of Interior.

———. 1985. *Refuge Manual.* Part 8: Public Use Management. Washington, D.C.: U.S. Department of Interior.

U.S. General Accounting Office. 1989. National Wildlife Refuges: Continuing Problems with Incompatible Uses Call for Bold Action. Washington, D.C.: GAO/RCED-89-196.

Wright, B.A., S.J. Backman, and B.E. Wicks. 1991. Operating at the "wildlife-human interface": A marketing approach to wildife planning. In: W.R. Mangun, ed. *Public Policy Issues in Wildlife Management.* New York: Greenwood Press.

IF WE TEACH IT, WILL THEY COME? SUMMER NATURE CAMP PARTICIPANTS—PARENTAL MOTIVATIONS AND CAMPERS' ACTIVITY PREFERENCES

Randy S. Smith
Curator of Education
Mesker Park Zoo
2421 Bement Avenue
Evansville, IN 47720

ABSTRACT: *Summer natural history day camps for children are a staple of outdoor/environmental education in many museums, zoos, nature centers, and other facilities. This study examines parental motivations and campers' activity preferences in an established summer program. Analysis of data from a participant survey shows why parents selected natural history programs and what was important about the program to them and their children. Understanding of clients' preferences is essential to the long-term success of these programs.*

KEYWORDS: *Summer nature programs, environmental education, museum education.*

Introduction

The Brazos Valley Museum of Natural History is a private non-profit regional facility located in Bryan/College Station, Texas. Summer Nature Camp is the museum's fastest growing and most profitable education program. Demand for the summer program is increasing. A survey was given to participantís parents and the results were evaluated to determine what attributes of camp were most important.

The main focus of SNC is environmental education. Campers are exposed to all aspects of the natural world with emphasis on regional ecology. The museum is the only natural-science facility within 100 miles and serves a population of approximately 140,000 local residents and members of surrounding communities. The museum's facility includes a 3,500-square-foot exhibit gallery that showcases regional Pleistocene fossils and related exhibits. A discovery room features interactive exhibits, live animals, and an observation bee hive. Educational space includes two independent classrooms as well as a nature lab featuring a wet lab and study area.

The survey provided answers for the following questions:

1. What are some of the attributes of camp that parents find important?

2. What activities are appealing based on age group and gender?

3. How many clients attend other programs in the community during the summer? How frequently?

Methods

The Brazos Valley Museum of Natural History is located in Bryan/College Station, Texas.

Summer Nature Camp is a nontraditional learning environment. Educational methodologies include guided discovery, experiential education, and object-based learning. Program content ranges from guest lecturers (animal rehabilitation experts, herpetologists, foresters, nautical archaeologists, etc.) to in-house experiences and adventures utilizing museum specimens, live animals, and prepared resources such as Project Wild and the National Wildlife Federation's Naturescope series.

The basic program consists of eight one-week sessions held during June-August. Each session has a specific area of focus (e.g., dinosaurs, wetlands). Participants may register for one or more sessions. Campers are divided into age groups. A half-day program is provided for 3- to 4-year-olds (9 a.m.-12 noon), Monday-Friday. The other ages are divided into sections for 5-6 years, 7-8 years, and for 9-12 years. The length of stay for these full-day campers is 9 a.m.-3 p.m., Monday-Friday. Extended care is available for campers before and after the normal camp session (7:30-9 a.m./3-5 p.m.) for an additional fee. For the 9- to 12-year-old age group, a day trip to a site corresponding with the activities for that session is included. Two instructors are provided for each age group. All instructors are college students or graduates either teaching or pursuing a degree in the field of interpretation, environmental education, or elementary education.

A survey was designed to gather information about SNC that among other things focused on the importance of camp and reasons for attracting persons to camp. Also age and gender preferences for activities by campers was examined.

The camper's registration form would serve as a demographic device for additional information. Each survey was coded with a number linked to the camper's registration form for use in demographic research. Registration form data included name, address, museum membership status, age, and the employment status of parents or guardians. The surveys included a wide range of questions. Whenever possible, questions utilized a five-point Likert scale with additional space for comments. Several responses used rating and ranking to determine the importance of specific attributes or activities. Two hundred and fifty-five surveys were distributed and one hundred and ninety were returned (74.5%). Administrative questions were asked rating camp information packets, the registration process, and scheduling of the sessions. Also included in this section were questions about the length of the day, use of the camp's extended day care service, and scholarships. Another group of questions focused on the marketing and advertising of SNC. The main portion of the survey emphasized the camp programming. The appeal of specific subjects, ratings of instructors, and the significance of camp attributes (educational content, cost, safety, etc.) completed this section. All questions could be correlated to the camper's age, gender, and other demographic factors. In most cases, parents of the campers completed the surveys. It is difficult to determine the degree of communication that existed between parent and child, therefore responses may be biased in favor of parental responses. It is important to understand this factor when interpreting data.

To analyze the data, the statistical package SPSS/PC+ was used. This program calculated frequencies and performed crosstabulations between sets of variables. Crosstabs were used to determine if significant relationships existed between questionnaire responses and age groups and gender of campers. A significance level of .05 or lower was applied to indicate a relevant correlation between variables. Chi Square values were calculated when performing crosstabulations.

Results

Customer demographics. Participants in SNC fall into several categories. Male campers were in the majority (63.7%) and female campers composed 36.3 percent of the attendees. A large percentage (65.7%) of SNC families also participate in other museum offerings.

Parents' work situations were also addressed. Both parents worked in 51.6 percent of the cases, and in 29.6 percent of the cases, only the father worked. Mothers were the sole worker in 14.5 percent of the cases and in 4.3 percent neither parent worked. Only 10 percent of campers utilized the extended day care program offered each morning and afternoon.

Many campers have a history of repeat attendance from year to year. Campers also may attend multiple sessions each summer. Participation in one session per summer was the most popular (48.6%) with two sessions (28.4%) being second in order. Campers attending three or more sessions per summer (14.6%) were in a small but important minority (Table 2). Of the campers surveyed, 50.8 percent of campers had attended SNC prior to the survey year. Many campers have attended for more than one year (48.3%). From one to three years is the most common number of years for attendance (37.1%), four to five years at 8.5 percent, and declining quickly after that period.

Why do they attend summer nature camp? Participants were asked to rate several attributes of camp on a scale from one to nine, with one being the most important and nine the least important. The results were compared by age group to see if there were any differences in ratings between age groups (Table 1).

Activities—to whom do they appeal? Participants were asked to indicate which activities/subjects appealed to their child. These responses were compared by age group and gender to ascertain whether there were significant differences in these areas. These activities were also ranked within each age group (Table 2).

Only two categories showed a significant correlation between gender and activity type. Games were preferred by 72.5 percent of girls and 53.4 percent of boys. Crafts were preferred by 78.3 percent of girls and 59.3 percent of boys. The level of significance levels for these activity correlations was .0130 and .0156, respectively.

Other activity related questions involved activities campers did not like and activities that should be added (Table 2). In the case of activities that were not appealing, 86.8 percent indicated that no activities fit this category. All other responses fit in the following categories: "other" (7.1%), games (3.2%), nature study (1.1%), and crafts (1.6%). Under activities to be added, 80.5 percent responded that "none" should be added. Other suggestions included 6.8 percent for miscellaneous, 3.2 percent for field trips, and others diminishing thereafter.

How many clients attend other programs and how often? Many campers participated in other summer programs (65.4%). The number of other programs in which campers participated is varied. Surprisingly, 7.2 percent of campers participate in four or more other programs, 33.1 percent participate in two to three other programs, and 24.3 percent in one other activity.

Table 1: Rating and rank of camp attributes by age group (1993)*

Importance of attributes of SNC	3- to 4-year-old campers	5- to 6-year-old campers	7- to 8-year-old campers	9- to 12-year-old campers
Safe environment	4.1 (4)	4.0 (4)	4.0 (4)	3.4 (3)
Convenience	7.9 (9)	6.8 (8)	7.3 (8)	7.1 (8)
Price	7.0 (8)	7.6 (9)	7.9 (9)	7.4 (9)
Available dates	5.7 (7)	6.1 (7)	6.2 (7)	5.6 (6)
Experience of staff	5.2 (5)	4.4 (5)	4.2 (5)	4.0 (4)
Social interaction	5.5 (6)	4.7 (6)	4.8 (6)	5.7 (7)
Educational content	2.3 (1)	2.5 (1)	2.6 (1)	2.3 (1)
Museum resources	3.3 (3)	3.8 (3)	3.7 (3)	4.4 (5)
Activities	3.1 (2)	3.2 (2)	3.1 (2)	3.3 (2)

Mean based on a 9-point scale where 1 = most important, 9 = least important.
*Numbers in parenthesis indicate the ranking of the mean for each age group.

Discussion of Results

Customer demographics. The museum's current customers fit into several demographic categories. The majority of campers are in the 5- to 8-year range, with 9- to 12-year-olds following, and 3- to 4- year-old in a slight minority. It is important to remember that the class size for 5- to 6-year-olds and 7- to 8-year-olds is 20 students where the other two age groups are limited to 15 participants per session. Therefore, the 5- to 8-year-old age group has a higher weight than the other groups. Of these participants, boys make up a higher percentage of the older two groups where in the younger groups, girls are less of a minority.

In 95.7 percent of the cases reported, one or both parents worked. In over half of the cases both parents were employed. In most cases, families had some past affiliation with the museum or became museum members at the time of camp registration. It is important to note that museum membership incorporates a program fee discount and a subscription to the museum newsletter and early SNC registration privileges. Many patrons see or are reminded of SNC through the newsletter each summer.

SNC customers typically participate in one camp session (48.6%) but a significant number of patrons attend two or more sessions (43%). Campers often attend for a number of years and often register far in advance of each session.

Why do they attend summer nature camp? Reasons that parents and children choose SNC are quite interesting. All four age groups of campers/parents responded that the educational content of the program was most important. Activities offered at camp were the second most important factor agreed upon by all age groups. After this point, different age groups responded in a divergent manner. Generally, museum resources, followed by safe environment and experience of staff were next in order of importance. Of least importance were available dates, price, and convenience. This may suggest that the session dates and times are adequate and relatively unimportant in the participant's decision process. Price's ranking may indicate that the price is relatively elastic but with an increase, its importance of price may be of greater concern.

It is evident from this information that clients are very interested in the quality of programs, their content, and implementation. The perception of the museum as a safe place for children is also evident and important. Parents seem to feel that the program is appropriate and important to their children both educationally and socially.

Activities —to whom do they appeal? One of the most revealing aspects of this study was the difference in activity preferences between age groups and to a lesser degree, gender. Throughout a wide range of activities there seems to be an important difference between likes and dislikes of age groups. Two of the most popular activities had no correlation between age and activity. These activities involved live animals and nature study. All groups indicated that these activities were important and well liked. An important age related difference occurred in the 9- to 12-year-old group. Their activities included a day trip, the most important component to their age group in the rating scale.

Another important difference is the level of interest in crafts. In the two youngest age groups, crafts are high in importance but decrease steadily in the two older groups. Games are well liked by the two middle-age groups but

Table 2: Activities that appealed to campers by age group (1993)

Activity type (note rank following number)	3- to 4-year-old campers (%)	5- to 6-year-old campers (%)	7- to 8-year-old campers (%)	9- to 12-year-old campers (%)
Hiking	41.2 (6)	66.1 (5)	75.0 (4-tie)	66.4 (4)
Crafts	58.8 (3)	80.4 (2)	57.7 (7)	40.0 (10)
Camping	14.7 (3)	33.9 (9)	65.4 (6)	57.8 (5)
Guest speakers	5.9 (10)	35.7 (8)	51.9 (8)	49.8 (7)
Nature study*	64.7 (2)	76.8 (3)	88.5 (1)	77.8 (3)
Ecology	11.8 (8)	37.5 (7)	50.0 (9)	48.9 (8-tie)
Live animals*	85.3 (1)	82.1 (1)	82.7 (2)	86.7 (2)
Social interaction	55.9 (4)	53.6 (6)	75.0 (4-tie)	48.9 (8-tie)
Games	47.1 (5)	75.0 (4)	80.8 (3)	53.3 (6)
Field trips	8.8 (9)	30.4 (10)	40.4 (10)	91.1 (1)

*Both nature study and live animal activities did not reach the .05 level of significance.
Numbers in parenthesis indicate the ranking of factors for each age group.
3- to 8-year-old campers did not participate in trips. Columns do not add to 100% due to multiple responses.

neutral in the youngest and oldest groups. Guest speakers, one of the most difficult activities to schedule, were reported as less important by all age groups. Social interaction is relatively high in the younger groups, possibly due to parents' interest in their child's interactions with others, but slightly less important in the older child.

The two categories where there was a significant correlation between gender and activity type were games and crafts. Female campers preferred these activities over males.

How many clients attend other programs and how often? There seems to be a certain amount of competition throughout the summer. Many of the respondents from the survey attend other programs. Since there are not any other museums, nature centers, or zoo in the area, there is no direct competition for a similar product mix. Other offerings are available such as sports camps, various programs at Texas A&M University, scouts, and the like. Primary competition is for time. Patrons of the museum seem to be very busy each summer with over half participating in another summer program.

Conclusions

The Brazos Valley Museum of Natural History's Summer Nature Camp is a continuing program that is seen as favorable with its patrons. During the last few years the camp enrollment has grown phenomenally. From 1988-1993, the total number of campers has increased steadily. To help understand this trend, it is important to reach some conclusions and to define portions of the program that ensure its popularity and viability over time.

Several important factors have been realized by this study. General demographics indicate that an increasing number of campers are in situations where both parents work. It will be important to cater to the needs of these households to remain competitive. The full-day program as offered at present is necessary to keep enrollment at the current levels. It may be necessary to extend the hours of camp at some point to accommodate a wider range of households. Although the ratio of boys to girls is unequal, there does not seem to be a significant difference in attitudes by gender to programming that would warrant a radical change in offerings.

Enrollment seems to start with younger children (3-5 years) and continue for an average of three years of camp. It is important to provide experiences that promote continued patronage over time. Many campers' families are museum members. It is relatively simple to keep in contact with these families each year at camp time through regular membership channels. A significant number of these families indicated that they are interested in or participate in other museum events. There is a ready-made audience for year-round programming if pursued by the museum marketing department.

SNC primarily attracts families of middle income or above from the local area. Many patrons also participate in other summer programs. To increase participation by other income groups, it may be attractive to offer scholarships sponsored by local institutions for sessions with reduced enrollment or to include a week for children with special needs. SNC also provides a dual role in museum revenue generation. Total revenue from camp is an important portion of the yearly budget. Since 65.8% of the campers were museum members and 65.7% participated in other museum events, camp also is responsible for significant indirect income for the museum.

Ratings of reasons why parents choose SNC indicate several things. Educational content is the single most important factor in choosing the museum camp program. Continued attention to program content and quality is very important to participants. Activities are also rated as very important. These should be varied and provide a natural progression of challenges over a several year period since many campers do return. All types of museum resources (collections, exhibits, live animals, etc.) should be integrated into the curriculum since this is also rated highly. Safety is also of paramount concern—it cannot be stressed enough that although this feature is ranked 3rd or 4th, it will rise to the forefront if problems occur. Lastly, it is also important to provide for social interaction. Although it is not highly rated, it is of importance if it is not a positive component of camp life.

The lower rating of convenience, available dates, and price may indicate that these factors are acceptable as is. Pricing of the camp is similar to many other programs' offerings. A small price increase could probably be tolerated, but the price may not be as elastic as the ratings may indicate. Of course, convenience and available dates become more important to the late registrant or a nonmember. Activities are almost universally well received by campers. Without a question, a major attractant for SNC is the use of live animals and other unique museum resources. Nature study was also rated high and serves as a core of study in the program. For 9- to 12-year-old campers who have already experienced the facility's animals and collections, day trips are very important. They often serve as a "bonus" for campers who return yearly until they reach the older group. If possible, day trips for the 7- to 8-year-old group could increase attendance in that age group. The only activities that had a larger appeal for girls were crafts and games. To increase female enrollment it may be necessary to augment the curriculum with additional programs of this type. Guest speakers were not highly rated but seem to be very popular with the older age groups at camp. The low rating may be due to the parents' perceived importance of other activities.

Since many of the museum's campers attend other summer programs, it is important to pay closer attention to the competition. The museum has the advantage of unique resources and opportunities and should capitalize on its differences. Although many campers will attend other programs each summer, if the museum continues to attract them for one or two sessions, the current rate of registration can easily be maintained. Any change in total registration should be examined carefully.

Implications for Interpretation

Summer Nature Camp appears to be in fine shape. As with many programs it is important to evaluate the program continually. In the two years since the survey was completed, registration has continued to rise. Since there is such a high expectation of educational quality within the program, it is essential to find a way to maintain this over time. Today's summer campers will ultimately support the museum.

INTERPRETIVE NEEDS AND PREFERENCES IN THE GREATER GREAT SALT LAKE WETLANDS ECOSYSTEM

Janet A. Anderson, Ph.D.
Adjunct Asst. Professor
Utah State University
Department of Forest Resources
Logan, UT 84322-5215

Dale J. Blahna, Ph.D.
Associate Professor
Utah State University
Department of Forest Resources
Logan, UT 84322-5215

***ABSTRACT**: Telephone and on-site surveys assessed the wetlands knowledge and the interpretive preferences—for both topics and modes—of current and potential visitors to various areas within the Greater Great Salt Lake Wetlands Ecosystem. Results reveal high levels of interest in on-site interpretation in general and suggest specific interpretive topics and modes to be developed.*

***KEYWORDS**: Wetlands, interpretation planning, survey research.*

Introduction

The Greater Great Salt Lake Wetlands Ecosystem (GGSLWE) stretches some 140 miles across the northern portions of Utah and comprises 75% of the state's wetland areas. The ecosystem provides critical habitat for shorebirds and a vital link in the Pacific Flyway migratory path, a role for which the Great Salt Lake has been designated a Western Hemisphere Shorebird Reserve. In addition to this critical wildlife function, the GGSLWE plays a major role in flood control, maintenance of groundwater quality and levels, pollution control, and water purification. With over 1.5 million people living in the GGSLWE area, the ecosystem provides valuable recreation resources as well.

The various areas that, in combination, make up the GGSLWE are managed by a variety of federal, state, and local entities as well as private sector owners, and as a consequence, interpretive efforts vary throughout the region. Under the auspices of the Utah Division of Wildlife Resources, this study attempted to identify interpretive needs and preferences within the GGSLWE region. The ultimate goal of the project is to provide the foundation for an integrated ecosystem-wide interpretive effort.

Both visitors and nonvisitors to wetland areas were surveyed using formal representative sampling techniques to assess their interest in and attitudes toward Utah wetlands. Additionally, they were asked about their own wetland activities, potential interpretive topics, and preferences for interpretive media. Visitors to a variety of GGSLWE public access points were contacted during their visits. Their responses provided information about the activities and views of current visitors. Past visitors, nonvisitors, and potential visitors were contacted via a telephone survey of residents in the seven counties comprising the GGSLWE region of the state.

Methods

On-site survey. Three hundred visitors to a variety of GGSLWE public access points were interviewed between September 2 and September 17, 1995. Sampling was distributed over 10 locations, and all visitors age 18 and older were included in the sample. The survey interview required about 10 minutes to complete, although some subjects took the time to give more detailed responses. Fewer than 20 visitors declined to participate in the survey. The findings are representative only of people visiting wetlands during the early fall sampling period.

Telephone survey. Three hundred additional respondents were included in a comparable telephone survey. Using a random sample of Utah residents in the seven-county GGSLWE region, households were contacted between August 30 and October 11, 1995. Within each household a subject age 18 or older was randomly selected and up to six attempts were made to contact the specified subject. Once the subject had been reached, up to three additional calls were made to obtain a completed interview. It took approximately 10 minutes to complete each interview. Out of 475 contacts 175 resulted in incomplete or non-responses for various reasons. Total response rate was 63.2%.

Analysis

The questions used on the two surveys were comparable except for minor wording changes to reflect the interview circumstances. Descriptive statistics of both surveys are presented together in results tables, but there are no statistical analyses between the surveys because the sample populations are not comparable. Bivariate analyses were conducted to control for general subcategories of respondents that are especially important for planning purposes. These independent variable analyses included gender, age (18-24, 25-44, 45-64, and 65 and older) and consumptive and appreciative recreationists for the telephone survey. For the on-site survey, the responses of Utah residents versus nonresidents were compared.

Findings
The complete discussion of methods and tables of results can be found in Andersen and Associates (1995).

Demographics of on-site visitors. More than twice as many males as females (63.1% vs. 36.9%) were contacted during the on-site surveys—in spite of a strict sampling randomization process and the census of population showing a 50/50 gender split for residents living within the GGSLWE counties and the state as a whole. Wetland visitors were also better educated than the general public; 51.0% of the visitors hold college degrees compared with just 15.5% of residents statewide. Individuals under age 24 (12.4% vs. 18.2% of the population) and over 64 (5.9% vs. 13.7% of the population) were underrepresented in the on-site sample.

Wetlands awareness and knowledge. The term *wetlands* was defined for survey subjects as "areas like marshes, shallow ponds, and riverbanks." One key question revealed that more than a quarter (27.9%) of visitors interviewed on-site were not aware that they were in a wetland area. When asked "Do you know who owns or manages this area?" 40.3% indicated they did not know, and 45.3% who thought they knew the responsible agency were incorrect. Just 14.3% of on-site visitors correctly identified the actual managing organizations.

While the overwhelming majority of subjects in both groups (telephone and on-site) said that wetlands are either "somewhat" or "very" important, those contacted on-site had a more positive response, with 78.8% indicating wetlands are "very important," compared with just 50.2% of telephone respondents. In an open-ended question, subjects were asked, "What benefits, if any, do you associate with wetlands?" The most often named benefit for respondents to both surveys was bird and/or wildlife habitat. Several important concepts were infrequently named and could be made key interpretive topics. These include flood control (10.2% on both surveys), maintenance of groundwater quality or levels (4.8%), and pollution control or water purification (6.2%). Additionally, the role of wetlands in broader ecosystems—identified by 37.7% of all respondents—warrants interpretation. Telephone interviewees were more likely than on-site sample subjects to identify recreational activities as benefits of wetlands.

Wetland visits and activities. Over 60 percent of on-site respondents (60.4%) and over one-half of telephone subjects (50.9%) had visited GGSLWE wetland areas in the 12 months preceding the study. Among those who had visited, telephone respondents were more likely to have visited 1-3 times (27.6%), while on-site subjects were more likely to have visited 10 times or more (25.8%).

While on-site subjects reported activities of the present (September) visit only, telephone respondents reported the activities of any past visit (n=156). The telephone interviews therefore yielded the best picture of wetland activities throughout the year. Their six most common activities included sightseeing (41.7%), fishing (39.7%), boating/canoeing (39.1%), watching birds/wildlife (28.2%), and a tie between camping and socializing with family/friends (24.4% each).

Interpretation and Education
When asked to rate the importance of learning opportunities at wetland sites, the telephone respondents indicated some interest, with 49.2% indicating that such opportunities are very important. On-site respondents, on the other hand, showed strong interest, with 78.8% rating wetlands learning opportunities very important.

Interpretive topics. Subjects were read a list of potential interpretive topics and asked to indicate how valuable they felt each type of information would be to them. As shown in Table 1, every topic was rated very valuable by over half of the on-site respondents. Telephone subjects also showed interest in every category (35-55% rating each item very valuable), but in somewhat lower percentages. "Maps of the area" and "Information on area birds" received the largest percentages of "very valuable" votes by both groups. For on-site respondents, area wildlife and plants were the next most popular topics, while telephone respondents wanted information on area wildlife and on wetland functions and importance. A follow-up question gave respondents an opportunity to name other interpretive topics that would interest them. The most common write-in topic on both surveys was history or history-related information, mentioned by 15 on-site subjects and 13 telephone respondents.

Interpretive modes. Next, participants were asked to indicate how valuable each of a variety of interpretive modes would be to them. Table 2 displays the percentage of respondents who indicated each mode would be "very valuable." As was the case with interpretive topics, on-site subjects indicated somewhat more enthusiasm for all of the options offered. Four modes appeared in both groups' top five information sources: orientation boards, personnel to answer questions, visitor centers, and exhibit signs. On-site subjects would add brochures and other print materials to the list, while telephone respondents would add nature trails. While most modes of interpretation are popular with on-site visitors, auto tours, group tours/outings, and children's interpretation received the lowest percentages of votes from both groups overall. Auto tours and organized programs for children rated lowest among interpretive preferences. The low rating assigned to auto tours, which are common in wildlife refuges, suggests that planners should not automatically default to auto tours as the interpretive mode of choice. See Table 2.

Interpretive Preferences for Different Types of Visitors

Preferences by gender. Using a scale of 1=Not important/valuable, 2=Somewhat important/valuable, and 3=Very important/valuable, Table 3 displays the differences between male and female importance and value ratings for interpretive topics and modes. Only those topics and modes for which there was a statistically different response between males and females are included. Additionally, just the results of the telephone interviews are included, because they provide the best estimate of year-round visitors and potential visitors.

While each mean rating displayed in Table 3 indicated a net positive response to a suggested interpretive topic or mode, in every case females responded more positively than males. The largest differences were in the females' stronger positive response to brochures and other printed materials, group tours or outings, and having personnel on hand to answer questions. The highest ratings overall were the females' value ratings for personnel on hand (2.66 out of 3.00), exhibit signs (2.62), and nature trails (2.55). Lowest ratings from both groups went to auto tours, group tours or outings, information sheets or games for children and organized programs for children (Table 3). Women displayed a significantly higher preference than men for just three interpretive topics, but were more interested than men in nine different interpretive modes.

This result is verified by Table 4, which lists all interpretive topics and modes that had mean ratings of 2.50 or higher, whether or not significantly different from the rating of the opposite gender. These results indicate that women, who tend to be in the minority of wetlands visitors, rated several different forms and topics of interpretation higher than men.

Preferences by age. The age groups compared included 18-24, 25-44, 45-64, and 65 years or older. The youngest group, 18 to 24 year olds, produced the highest mean rating for both the importance of wetlands (2.68) and the importance of providing on-site opportunities for visitor learning (2.63). In fact, there was an inverse relationship between age and both importance ratings.

The only interpretive topic for which there was a statistically significant difference among age groups was information about area wildlife. The lowest (but still decidedly positive) mean rating came from people in the 65 and over age group (2.30 rating out of 3.00). The highest mean rating came from the 25 to 44 year olds (2.58).

The 25 to 44 year olds (39.8% of visitors), had high positive responses to a variety of both interpretive topics and modes, suggesting an interest in interpretation in general. Visitors in the oldest age category (65 and older) showed a preference for visitor centers (2.69 mean rating) and personnel on hand to answer questions (2.71). They also rated auto tours and group outings higher than visitors in other age groups.

Preferences of consumptive vs. appreciative users. Table 5 displays the differences in interpretation importance and value ratings by past consumptive and appreciative users. In order to give the best estimate of year-round use, only the responses of the 156 telephone subjects who had visited wetlands during the last 12 months are included. Consumptive users are defined as those who have participated in fishing, hunting, or trapping in wetland areas during this period; all others are categorized as appreciative users.

Previous wetlands visitors were evenly split between consumptive (n=78, 50%) and appreciative (n=78, 50%) users. Just four statistically significant differences were found between the interpretive preferences of these two groups of wetlands users. Appreciative users gave statistically higher mean ratings than consumptive users to: information on area plants (2.51 vs. 2.21), information about why wetlands are important (2.69 vs. 2.48), nature trails (2.68 vs. 2.40), and auto tours (1.92 vs. 1.64). Appreciative users also gave ratings of 2.50 or greater (out of 3.00) to nine topics and modes, while consumptive users rated just four items at that level: maps of the area, information on area birds, information on area wildlife, and information about wetlands and how they function.

Preferences of Utahns vs. out-of-state visitors. Almost half of GGSLWE wetland visitors (46.4%) are not Utah residents. Furthermore, non-Utahns demonstrated greater enthusiasm than Utah residents for interpretation in general. Fourteen of the 20 interpretive modes and topics were rated above 2.50 by out-of-state visitors, compared to only five by the Utah residents.

Although out-of-state visitors showed significantly greater interest than Utahns in information on what to see and do (2.70 vs. 2.36 out of 3.00), information on what activities are allowed or prohibited (2.60 vs. 2.40), and information about wetlands and how they function (2.55 vs. 2.38), Utahns were also obviously interested in these topics. By contrast, there was greater difference between the mean ratings of the two groups for five particular interpretive modes: auto tours, brochures and other printed materials, visitor centers, group tours or outings, personnel on hand to answer questions, and viewing blinds or observation towers. All of these were favored by out-of-state visitors, who were especially interested in brochures (2.67), visitor centers (2.67), having personnel on hand (2.59), and observation blinds or towers (2.50).

Discussion and Implications for Interpretation

The survey results suggested several important implications for wetlands recreation and interpretation. Most importantly, wetland visitors want interpretation. Over 96% rate learning opportunities either very (78.8%) or somewhat (17.8%) important. Past, present, and potential visitors all indicated high levels of interest in on-site interpretation.

Interpretive topics. The selection of interpretive topics is important for enhancing wetlands knowledge and awareness and for encouraging visitation. High ratings were given to all interpretive topics listed. In fact, the topic that received the lowest rating overall—information about wetland issues and controversies—still received "very valuable" scores from 46.4% of all respondents. Therefore, most site-related topics would be appropriate.

While most respondents to both surveys indicated that bird and wildlife habitat are important benefits of wetlands, few respondents were aware of benefits related to groundwater quality and levels, water filtering and pollution control, flood control, and the role of wetlands in broader ecosystems. Popular topics such as birds and wildlife could be used at all public access points within the wetlands ecosystem to attract visitors and hold visitor attention on-site. These topics should also be used to lead visitor interest to the less exciting but equally important topics related to wetland functioning, broader ecosystem values, and even social benefits of wetlands.

Providing information regarding recreation activities that are allowed or prohibited was a concern of telephone respondents, perhaps reflecting the interests of hunters and the orientation needs of potential visitors. (Hunters were underrepresented in the on-site survey because the study was conducted during a month when hunting was not allowed.) Both on-site and telephone survey respondents felt maps are one of the most important types of information they would like to have available in wetland areas. (Note that maps were included in the study as both an interpretive topic and a mode. Maps received high ratings in both categories.) The three top-rated topics among all respondents were: maps of the area, information on area birds, and information on other area wildlife.

Based on the telephone interviews, high participation rates in boating/canoeing, camping, fishing, sightseeing, and observing area birds and wildlife suggested there may be a need for interpretation to support these activities. Also notable was the fact that a similar number of respondents reported using nature trails (12.2%) and driving for pleasure (14.1%). This indicates the value of both types of opportunities within wetland areas. The fact that half of past wetlands users are hunters, trappers, or fishermen indicate a need to include laws and safety messages related to consumptive pursuits. Otherwise, however, the small number of statistically significant differences between consumptive and appreciative users suggests there is no reason to target specialized interpretation at either of these user categories.

Very few visitors sampled on-site, were aware of the agency that managed the wetland area they were visiting. This suggests that, if wetland management agencies want to interpret their mandate and management practices to the public, this could also be an important interpretive topic.

Finally, the preponderance of male visitors suggests it may be appropriate to focus on interpretive topics of special interest to men (i.e., birds and wildlife), particularly since women indicated interest in virtually all topics on the survey. On the other hand, providing interpretation on topics of greatest interest to women (i.e., birds and wetland functions and importance) might help increase return visits by women.

Interpretive modes. The selection of interpretive modes is another critical concern for planning. Unfortunately, the survey results were less conclusive regarding respondents' preferred modes than their topics of interest. Most interpretive modes were rated relatively high by both survey groups with orientation boards, exhibit signs, visitor centers, and personnel to answer questions rated among the top five interpretive modes by respondents to both surveys.

One surprise in the findings was the low rating given to auto tours—which are common interpretive modes in wildlife refuges—by both survey subsamples. This result may indicate that less emphasis should be put on auto tours in wetland areas, or it may simply reflect respondents' lack of experience with this form of interpretation.

Another surprise in the findings was the relatively low rating given to forms of interpretation targeted for children. This could reflect the fact that few children visit wetlands. This may simply reflect the timing of the on-site survey (when school was in session), but it probably also indicates that the focus of children's interpretation should be on outreach programs and materials rather than on-site interpretation. It also suggests that promotion of group visits (schools, scouts, etc.) is needed to encourage visitation by this important subgroup, and to increase their awareness of the importance and functioning of wetlands.

Outreach. An active educational outreach campaign is important for reaching potential visitors as well as women and both younger (under 24) and older (over 64) adults, who tend to be underrepresented in wetland areas. Most of the telephone respondents who indicated they would be interested in visiting wetlands in the future were the same individuals who already visited during the last 12 months. Thus, expanding interest and awareness of wetland educational and recreational opportunities to new audiences must start with an off-site educational plan designed to reach people in their homes, schools, churches, etc.

Off-site interpretation should explain the value and importance of wetlands and focus on the experience opportunities to be found there. Employing and publicizing the telephone respondents' preferred interpretive modes (personnel to answer questions, exhibit signs, nature trails, visitor centers, and orientation boards) may be an effective strategy for bringing potential visitors out to wetland areas.

References Cited

Andersen & Associates. 1995. *Needs Assessment and Conceptual Plan for Interpretative Recreation and Education for the Greater Great Salt Lake Wetlands Ecosystem.* Salt Lake City, UT: Utah Division of Wildlife Resources.

Table 1. In a wetland area, how valuable to you are/would be each of the following *types* of information?

On-site interviews	Rank	INTERPRETIVE TOPICS RATED VERY VALUABLE	Rank	Telephone interviews
210 (70.5%) Mean: 2.65 n=298	#1	Maps of the area	#2	160 (53.9%) Mean: 2.46 n=297
194 (65.3%) Mean: 2.58 n=297	2	Information on area birds	1	165 (55.4%) Mean: 2.52 n=298
194 (65.1%) Mean: 2.58 n=298	3	Information on other area wildlife	3	159 (53.5%) Mean: 2.51 n=297
184 (61.7%) Mean: 2.54 n=298	4	Information on area plants	9	105 (35.4%) Mean: 2.27 n=297
181 (60.9%) Mean: 2.52 n=297	5	Information on what to see and do	6	125 (41.9%) Mean: 2.34 n=298
174 (58.8%) Mean: 2.49 n=296	6	Information on what activities are allowed or prohibited	7	124 (41.6%) Mean: 2.29 n=298
168 (56.9%) Mean: 2.47 n=295	7	Information about wetland issues and controversies	8	106 (35.9%) Mean: 2.29 n=296
166 (56.3%) Mean: 2.46 n=295	8	Information about wetlands and how they function	5	154 (52.0%) Mean: 2.48 n=296
162 (54.7%) Mean: 2.46 n=296	9	Information about why wetlands are important	4	156 (52.7%) Mean: 2.49 n=296

Note: Counts and percentages represent the number of respondents who said each topic would be "very valuable." Means are calculated on a scale of 3=Very valuable, 2=Somewhat valuable, 1=Not valuable at all.

BEST COPY AVAILABLE

Table 2. In a wetland area, how valuable to you would each of the following information *sources* be?

On-site interviews	Rank	INTERPRETIVE MODES RATED VERY VALUABLE	Rank	Telephone interviews
192 (64.6%) Mean: 2.55 n=297	#1	Orientation board	#5	140 (47.1%) Mean: 2.37 n=297
185 (62.7%) Mean: 2.42 n=295	2	Visitor center	4	153 (51.5%) Mean: 2.39 n=297
174 (59.0%) Mean: 2.39 n=295	3	Brochures and other printed materials	6	115 (38.7%) Mean: 2.26 n=297
169 (57.1%) Mean: 2.49 n=296	4	Exhibit signs	2	166 (55.9%) Mean: 2.53 n=297
159 (53.9%) Mean: 2.37 n=295	5	Personnel on hand to answer questions	1	168 (56.6%) Mean: 2.49 n=297
147 (50.9%) Mean: 2.28 n=289	6	Viewing blinds and observation towers	7	109 (36.9%) Mean: 2.24 n=295
149 (50.5%) Mean: 2.38 n=295	7	Nature trails	3	156 (52.5%) Mean: 2.45 n=297
109 (36.9%) Mean: 2.04 n=295	8	Organized programs for children	8	83 (27.9%) Mean: 2.01 n=297
96 (32.3%) Mean: 1.93 n=297	9	Auto tours	10	76 (25.7%) Mean: 1.90 n=296
94 (32.0%) Mean: 1.97 n=294	10	Information sheets or games for children	9	77 (25.9%) Mean: 1.97 n=297
87 (29.7%) Mean: 1.94 n=293	11	Group tours or outings	11	64 (21.5%) Mean: 1.92 n=297

Note: Counts and percentages represent the number of respondents who said each would be "very valuable." Means are calculated on a scale of 3=Very valuable, 2=Somewhat valuable, 1=Not valuable at all.

Table 3. Mean ratings[a]: Statistically different interpretive preferences by gender. (Telephone interviews only.)

	Males: mean rating	Females: mean rating	F ratio	Probability
HOW IMPORTANT				
Provide opportunities for visitor learning (n=287)	2.45	2.57	4.569	.003
INTERPRETIVE TOPICS: HOW VALUABLE				
Information on what to see and do (n=295)	2.25	2.48	10.058	.002
Information on what activities are allowed or prohibited (n=295)	2.22	2.39	4.266	.040
Information on area plants (n=294)	2.20	2.37	5.50	.020
INTERPRETIVE MODES: HOW VALUABLE				
Exhibit signs (n=294)	2.47	2.62	4.758	.030
Nature trails (n=294)	2.40	2.55	4.559	.034
Auto tours (n=293)	1.77	2.07	11.243	.001
Brochures and other printed materials (n=294)	2.14	2.44	15.348	<.001
Visitor center (n=294)	2.30	2.52	7.507	.007
Group tours or outings (n=294)	1.75	2.17	27.626	<.001
Information sheets or games for children (n=294)	1.85	2.14	10.843	.001
Organized programs for children (n=294)	1.89	2.18	11.435	.001
Personnel on hand to answer questions (n=294)	2.37	2.66	16.265	<.001

Note: Males n=171; Females n=126.

[a] Scale of 1=Not important/Not valuable, 2=Somewhat important/Somewhat valuable, 3=Very important/Very valuable.

BEST COPY AVAILABLE

Table 4. Interpretive topics and modes: males' and females' ratings of 2.5 or higher (whether statistically different from the opposite gender or not). (Telephone interviews only.)

Males	Mean rating
Information on area wildlife	2.53
Information on area birds	2.52
Females	**Mean rating**
Information on area birds	2.54
Information about wetlands and how they function	2.54
Information about why wetlands are important	2.54
Personnel on hand to answer questions	2.66
Exhibit signs	2.62
Nature trails	2.55
Visitor center	2.52

Note: Males n=171; Females n=126.
Scale of 1=Not valuable, 2=Somewhat valuable, 3=Very valuable.

Table 5. Mean ratings[a] : Statistically different interpretive preferences of consumptive and appreciative recreationists. (Telephone interviews only.)

	Consumptive users: mean rating	Appreciative users: mean rating	F ratio	Probability
INTERPRETIVE TOPICS: HOW VALUABLE				
Information on area plants (n=155)	2.21	2.51	11.71	<.001
Information about why wetlands are important (n=154)	2.48	2.69	5.777	.017
INTERPRETIVE MODES: HOW VALUABLE				
Nature trails (n=156)	2.40	2.68	8.583	.004
Auto tours (n=155)	1.64	1.92	5.747	.018

Note: Includes only telephone subjects who indicated wetland visits in last 12 months.
Consumptive users n=78; appreciative users n=78.
[a]Scale of 1=Not valuable, 2=Somewhat valuable, 3=Very valuable.

MARKETING CULTURAL RESOURCES: VISITOR EXPECTATION, PERCEPTION, AND SATISFACTION

John H. Burde
Professor
Department of Forestry
Southern Illinois University
Carbondale, IL 62901-4411

Christopher Mayer
Interpreter
Forest Preserve District of Will County
22606 S. Cherry Hill Rd.
Joliet, IL 60433

ABSTRACT: Marketing is useful in determining product demand and satisfaction as shown in an application to a living history farm at TVA's Land Between the Lakes. Two concurrent visitor surveys assessed previsit expectations and preferences for learning and postvisit satisfaction and perceptions of quality. Overall, customers were extremely satisfied with programs and facilities.

KEYWORDS: Marketing, living history, expectation, evaluation, learning.

Introduction

As budget constraints and staff reductions make the delivery of interpretive programs more difficult, marketing techniques have proven useful for many public agencies. By considering product, price, and promotion when developing interpretive programs and/or facilities, managers can best determine what visitors want, and then provide it. Attracting visitors is only part of the job. Managers need to know if the interpretive messages are meeting the expectations of visitors.

One such example is the interpretation of cultural resources. Media to interpret historical sites include exhibits, signs, publications, and personal techniques such as storytelling and living history. Objectives may include resource protection, improvement of citizen support for the site, and visitor enjoyment.

But what should an interpretive program include? In a marketing sense, experiencing the interpretive program combined with the benefits it produces is the "product." Kotler (1982) notes that the product is the primary benefit sought by the consumer (site visitor), yet often the visitor's reasons for participation in interpretive programming are unknown. The author poses two questions about the product: what is the participant really looking for in a recreation (interpretive) experience, and what need is the individual seeking to satisfy through involvement in this program? Visit outcomes are often unknown. Typically, the short- and long-term benefits to the individual (or society) resulting from interpretive experiences are not enumerated by staff, much less measured. Frequently, a product is produced with little analysis of demand for that product and little effort to analyze consumer satisfaction for that product.

Previous Work

The major goals of marketing focus on the consumer and the products they demand (O'Sullivan 1991). Chiatt (1987) states that "marketing interpretive services includes the mix of what the product is, where it's offered, who it is offered for, and what the cost of these products is. Each element plays a critical role in successfully meeting customer wants."

Too often, marketing is seen as "selling" or "advertising." Rather it is, as noted by Zopp (1987), "a set of activities, based on client wants, then pricing, promoting, and distributing these services effectively." Though typically thought of as a tool in the private sector, marketing has been widely adopted by the public sector to improve performance (Crompton and Lamb 1986). Some public agencies have found marketing useful in identifying what visitors (clients) want in their experience and then, using promotion and distribution, finding the best means to deliver that product. For many recreation activities, fees (price) have become an important part of the mix in revenue generation and subsequent effects on visitation. In the end, examining product, price, and promotion allows management to identify what the customer wants, then finds the best methods to provide it.

One example of a resource management agency that has adopted a marketing strategy is TVA's Land Between the Lakes (LBL) located in western Kentucky and Tennessee. Since 1985, the goals of marketing have increased visitation, improved and enhanced the image and communications with the public, increased revenue and funding, and provided more knowledge about the audience served (Burde and Howatt 1993).

In addition to using marketing as a planning tool in LBL's recreation program, individual facilities have also been studied. Sean Harper (1990) analyzed Empire Farm, an interpretive facility dedicated to self-sufficiency. Gary Howatt (1991) assessed the product of Woodlands Nature Center, LBL's primary interpretive site for natural history. He further analyzed visitor wants and, using market segmentation, identified promotional schemes for each segment. Existing fees were analyzed using willingness-to-pay. Despite meager promotional efforts, Howatt found visitors to be highly supportive of Woodlands interpretive programming and facilities.

Marketing can also be used in interpreting cultural resources. C.G. Screven (1993) gave an evolutionary overview of user studies in cultural resources management. By noting that visitor studies include such variables as attendance data and demographics, observable on-site behavior patterns of visitors including where they go, time spent reading labels, activities and exhibits favored, as well as attitudes, misconceptions, and perceptions of quality. However, user studies do not equate with marketing. Unless the information about visitors is combined with the entire delivery system of the product including its price, it will be of little practical use. The interpretive "product" will be created using "best guess" technology.

Problem Statement

The focal point for cultural resource management at LBL is The Homeplace-1850. Opened in 1978, The Homeplace portrays a multi-generation farm of the 1850s, utilizing historic structures from throughout LBL. Since its inception, The Homeplace has been interpreted by costumed interpreters, living history, exhibits, and audio-visual programming. Interpretation has been based on small scale user studies, conducted by student interns to assess user characteristics. Ultimately, goals and objectives were established, directing programming and development of the area.

Unfortunately, like so many other cultural resource sites, little knowledge was available concerning the reasons people came to The Homeplace or their expectations about the visit. In addition, not much was known about visitor's perceptions of their visit. Were their expectations met? Were they satisfied with their visit? Will they return? A product was being produced, but was it the product people wanted? Was it a product they will continue to consume?

To answer these questions, a marketing approach was applied to The Homeplace. The goal was to examine the product in two ways. First, was the product what people wanted? What aspects are of interest to them? Which media are most accepted by visitors? Secondly, are people satisfied with the product? If not, what aspects needed to be improved?

Objectives

The objectives of the study were to (1) describe the previsit expectations of visitors to The Homeplace, (2) to assess the postvisit perceptions and satisfactions of their visits, and (3) to compare the pre- and post-visit respondents to determine if their visit to The Homeplace had changed previsit perspective.

Methods

The following section describes the study site, instruments, and sampling utilized to achieve the study objectives.

Study Site

The Homeplace-1850 was created after the European model of living history villages and farms especially popular in Scandinavia. In the early 1970s, management was faced with the decision on the disposition of historic buildings left from previous private owners. These structures were widely scattered among the LBL's 170,000 acres; many posed safety hazards as their physical conditions deteriorated. The final decision was to select the most noteworthy structures historically and utilize them as an interpretive resource and to dismantle the remainder.

In 1976, the homes and outbuildings were spatially arranged in a wooded valley to show mid-nineteenth century rural living. The surrounding pasture and forest were managed to demonstrate natural resource uses of the period. The small permanent staff, augmented by seasonal employees, now present living history demonstrations of typical farm activities. Tobacco, corn, and other vegetables of the period are produced using equipment and methods of 1850; live farm animals mingle with visitors.

Between the parking area and the historic farm, a berm was constructed to limit visual and noise intrusions from the outside. An Interpretive Center within the berm provides the only access to the farm. The center provides exhibits, audiovisual programs, and an extensive sales outlet for local crafts. After exposure to an introductory slide program, visitors enter the farm for a self-guided tour of the facility and to view the living history programs. No modern amenities are provided on the farm.

Research Instrument

The research instruments used were personal questionnaires, administered concurrently. One was a sample of visitors prior to their visit, and the other was a sample of visitors after their visit. Both were based on previous LBL marketing studies and utilized significant TVA staff input. Both contained 18 questions on visitor demographics, visit perceptions and on-site behaviors, and general expectations and goals for their visit. The previsit survey focused on expectations and preferences for learning, while the postvisit survey focused on satisfaction. Open-ended questions were utilized in both to probe reasons for visiting and outcomes of the visit.

Sampling

Pre and post visit surveys were administered randomly to selected visitors on-site; no individuals were included in both. In the previsit survey, visitors were queried prior to entering the Interpretive Center. Postvisit visitors were questioned as they departed the farm toward the Interpretive Center. Interviewing was conducted on randomly selected weekends and weekdays throughout the summer of 1994. Morning and afternoon visitation was included in both. Sample size for the previsit survey was 204; for postvisit, 201 visitors were interviewed.

Results

Visitors to The Homeplace came from the Midwest and South with the majority coming from Tennessee (42 percent), Kentucky (18 percent), and Illinois (15 percent). Primarily, they visit in groups of two, but groups of three and four are fairly common. More than half of the respondents were between 30 and 50 years of age with a mean of 43 years. Nearly 60 percent had attended college and two-thirds of those were college graduates. About 60 percent had annual incomes between $20,000 and $50,000. The most common reasons for visiting The Homeplace was to visit a cultural site specifically, or as part of a scenic drive. Only 10 percent were camping, fishing (6 percent), boating (4 percent), or canoeing (1 percent).

Previsit Characteristics

Knowledge. Visitors were asked what they knew of regional history and general farm life of the period. Nearly one-half were very unfamiliar with regional history; 38 percent were somewhat unfamiliar. Of farm life, 23 percent were totally unfamiliar, while another 37 percent were somewhat unfamiliar. Clearly, visitors have only modest knowledge of the overall subject matter displayed at The Homeplace.

Expectations. As noted by Chiatt (1987), "everybody enters a situation with a set of experiences and expectations, and looking to obtain benefits. Understanding those expectations and desires, and working to satisfy them, is key to visitor satisfaction, increased understanding, support, and repeat use." On the contrary, nearly one-third of visitors to The Homeplace claimed to have no previsit expectations. Of those that did have expectations, most were simple—to see interpreters in period costumes showing how people lived in the past century.

Previsit learning goals. Although visitors had limited previsit expectations, many did have learning goals. Using an open-ended question, visitors were asked what, if anything, they wanted to learn during their visit. Only 10 percent said they didn't have any learning goals. The most commonly expressed goal was to learn about everyday life in the 1850's (38 percent). Others included hardships, survival, chores, and music. When queried further, the most popular aspect of pioneer life to be studied was food and cooking methods.

Previsit knowledge of The Homeplace. Although 27 percent of visitors found out about The Homeplace from TVA brochures, most often these brochures were obtained only after arrival on site. Another 25 percent learned from newspapers, 24 percent from family or friends, and 14 percent from road signs. Only 57 percent of visitors actually knew of The Homeplace prior to their visit to LBL. As with previous LBL marketing studies, results showed that communication with potential visitors is limited to local media; more widespread dissemination of information about LBL features is necessary.

Postvisit Satisfaction

Visitors were queried as to their satisfaction of the individual aspects of their visit. Each is described below.

Interpretive Center. The Interpretive Center is designed to orient the visitor to the farm and what it offers. The Center provides exhibits of farm life including common crops, tools, and household items. The exhibits are displayed in glass cases and in wooden cabinets with space-saving drawers. More than three-fourths of visitors looked at the exhibits and read the accompanying text. The slide show is designed to tell the visitor what to expect, what to do, and to describe the facilities, or lack thereof, found on the farm. Only 62 percent of visitors reported that they saw the program, though others stated they would see it as they left the center. Therefore, the orientation function is missed by nearly one-third of the visitors.

Staff. Interpretive staff in period costume are readily available at the farm. More than 90 percent of visitors reported that they had a good chance to interact with staff. A series of Likert-scales were used to assess visitor satisfaction with staff. Staff was an important aspect of the visit: 56 percent of visitors considered staff very important, 43 percent important. Visitors generally had a positive experience with staff; 64 percent reported a very positive experience, 34 percent positive and 2 percent neutral. When rating the quality of staff, 74 percent rated accessibility high; 80 percent rated staff knowledge high, 20 percent rated it good. Period costuming was also rated high by 80 percent of visitors; the remainder rated it as good. More than 90 percent of visitors asked questions of the interpreters. Almost all (98 percent) reported that they received clear answers.

Educational experience. Visitors rated their educational experience highly. Nearly two-thirds considered it very good, another 32 percent rated it as good. During the postvisit interview, visitors were more specific in the aspects of their learning. Of the agricultural activities on the farm, the most preferred learning subjects were log home construction and design (15 percent), livestock (13 percent), tobacco (12 percent), farm tools and implements (10 percent), and woodworking tools (10 percent). For domestic activities, the most preferred were food preparation and preservation (35 percent), sewing and weaving (24 percent), and furniture (13 percent).

Respondents were also asked what may have been lacking about their learning experience. They were asked to identify specific topics they wanted to know more about. In agriculture, the only topic not routinely depicted on the farm was corn whiskey production, mentioned by 33 percent of visitors. For domestic activities, the most common subjects not routinely covered were folk remedies (19 percent), birth and death (13 percent), education (12 percent), and religion (8 percent). For general topics, visitors said they would like to know more about crime and punishment (19 percent), the economy in 1850 (12 percent), and Native-American relations (11 percent).

Entrance fees. Postvisit interviews asked opinions on entrance fees. In general, visitors found fees acceptable or very acceptable (88 percent), while only 2 percent found them unacceptable. Clearly, the presence of fees did not decrease the visitor enjoyment of their experience. All but one respondent said they would recommend The Homeplace to family and friends.

A Comparison

Comparing the two samples may be useful in assessing the quality of the interpretive experience. The following describes how the visit changed (or didn't change).

Length of stay. There is little difference when comparing the pre- and post-values for length of stay. Previsit visitors planned to stay approximately one hour and 20 minutes. The actual reported length of stay was one hour and 12 minutes. Nothing enticed the visitors to stay longer than they had originally planned.

Perception of learning. Previsit expectations were basically to see a pioneer farm staffed with people in period costumes. In comparison, perceptions of postvisit respondents were more positive. The most frequently mentioned aspect of the visit was the presence of live animals, mentioned by 55 percent. A few responses suggest disappointment such as "expected more in general" (4 percent) and "expected more demonstrations" (2 percent). For most visitors, the experience greatly exceeded previsit expectations. Table 1 lists other aspects of the visit that changed expectations.

Table 1. How The Homeplace differed from previsit expectations

Difference	Percent
More live animals	54.8
Did not expect interpreters	14.0
More authenticity	14.0
More accessible (not roped off)	10.4
Less primitive	4.3
Expected more in general	3.5
More primitive	2.6
Expected more demonstrations	1.7
Did not expect environmental message	1.7

Conclusions and Discussion

Previsit respondents were mostly unfamiliar with nineteenth century farming, yet nearly all considered history as an important part of their visit. Nearly one-third had no expectations as to what they would see. The most frequently mentioned learning goal was to learn about everyday historic farm life. Most visitors planned to spend one hour and twenty minutes on the farm.

Postvisit respondents were satisfied with programs and facilities. More than three-fourths viewed exhibits and read the text; nearly all were highly satisfied with staff interactions and overall opportunities for learning. When compared with previsit expectations, the most frequent responses were finding live farm animal exhibits, more interpretive staff than expected, especially those in costume, and more historic authenticity than expected. Actual time spent on the farm averaged one hour and twelve minutes.

The use of marketing in interpretation seeks to optimize the delivery of programming and facility outputs. It can be used to find out what visitors seek in an interpretive experience, and then designing programming and facilities to provide it. In the case of The Homeplace, marketing analysis showed that the product being produced met the expectations of visitors.

Implications for Interpreters

Interpretive managers and planners have recognized the need to know and understand the clientele they serve. Understanding often comes from visitor studies, which include such variables as attendance data and demographics, observable on-site behavior patterns of visitors, attitudes, misconceptions, and perceptions of quality (Screven 1993).

User studies alone, however, do not ensure a quality product.

First, it is essential that some consideration be given to previsit expectations. Providing what visitors want must be part of the decision process in interpretive planning. Interpretive objectives must be met but in way that visitors will enjoy. At The Homeplace, it is clear that the experience was what visitors wanted to the point where they were open to learning and, though not tested here, were likely to have been instilled with viewpoints that lead to support for and protection of cultural resources. Just giving people what they want is not appropriate—professional expertise of managers, planners, historians, and interpreters must be used to achieve management goals. But within those constraints, visitors' wants must be addressed or interpretive opportunities will be lost.

Interpreters must continue to ensure a quality product. Visitor satisfaction is a must if we are to build support and ultimately change behaviors (Tilden 1957). A good experience creates positive reinforcement, resulting in repeat visitation and more opportunities to get interpretive messages to the public. Unfortunately, the converse is also true. The starting point must be a quality product—no amount of marketing can overcome the lack of it.

The Homeplace study also illustrates the public's lack of knowledge about what interpretation is and what interpreters do. A significant portion of visitors arrived with a poorly defined set of expectations. A quality product can help make a positive first impression. Interpreters need to get the message out as to what the profession is all about. There are real opportunities to reach more of the public, the nonusers of existing interpretation. At least part of the reason for nonuse of The Homeplace is a lack of communication with users beyond the immediate area. The role of promotion in marketing is critical, and it is no less true in interpretation than elsewhere.

A positive outcome of this study for interpreters is visitor response to learning. It is clear that visitors to The Homeplace, for the most part wanted to learn something. Interpreters who fear that their craft may be becoming more entertainment than education-oriented can feel reassured that a significant portion of the clientele still wants something more than pleasure.

A negative aspect identified in the study was that some designs didn't work well. The Interpretive Center is designed to channel all visitors through the theater for the orientation slide program. Less than two-thirds of visitors actually saw it, although it is not clear how they managed to avoid it. Traffic flow will need to be reviewed. The exhibits displayed in drawers were viewed by fewer than half of those passing through the center. When asked why, the most common response was that they thought they were private drawers, not open to the public. Visitors need to be welcomed to use the drawers, possibly by signing.

When comparing previsit learning expectations with the actual results, Tilden's First Principle—interpretation that doesn't relate what is displayed to something within the personality or experience of the visitor will be sterile (Tilden 1957) is reaffirmed. Visitors expected to see pioneer survival. What they learned was that life then and now has many similarities in nourishment, education, politics, and religion. The human experience becomes more meaningful as they see how today's lifestyle has much in common with our forefathers. As marketing is added to the tool kit, we can see that the historic bases of interpretation still contribute significantly to our efforts.

The days of relying on visitor studies, or worse yet, on our "best guess" are over. We must use information about the resource we manage and the people we serve to create a quality, meaningful product. That quality product must then be effectively promoted to attract a clientele, hopefully one that will ultimately include all aspects of society. A quality message, received by today's heterogenous society, gives us a real interpretive opportunity to build support, to change behavior. Marketing is a key factor in making it so.

References Cited

Burde, John, and Gary Howatt. 1993. Marketing nature centers: product, price, and promotion. *Legacy* 4(4):16-21.

Chiatt, W. 1987. Do you wanna buy a duck? Marketing interpretive services. In: *Proceedings, National Interpreter's Workshop, St. Louis, MO.* November 1987. pp. 24-26.

Crompton, John L., and C.W. Lamb. 1986. *Marketing Government and Social Services.* New York, NY: Wiley and Sons.

Harper, Sean. 1990. A marketing analysis of Empire Farm, Land Between the Lakes, KY. M.S. Thesis, Stephen F. Austin State University, Nacogdoches, TX.

Howatt, Gary. 1991. A marketing segmentation for Land Between the Lakes's Woodlands Nature Center. M.S. Thesis, Southern Illinois University, Carbondale, IL.

Kotler, P. 1982. *Marketing for Non-Profit Organizations.* 2d ed. Englewood Cliffs, NJ: Prentice-Hall.

O'Sullivan, Ellen L. 1991. *Marketing for Parks, Recreation and Leisure.* State College, PA: Venture Publishing.

Screven, C.G. 1993. United States: a science in the making. *Museum International* 178(45):6-12.

Tilden, Freeman. 1957. *Interpreting Our Heritage*. Chapel Hill, NC: University of North Carolina Press.

Zopp, J.L. 1987. Yes, you can devise an in-house marketing plan. *Illinois Parks and Recreation* 18(3):7-9,12.

Appendices

Journal of Interpretation
Information for Authors

The purposes of the *Journal of Interpretation* are to communicate original empirical research dealing with interpretation and to provide a forum for scholarly discourse about issues facing the profession of interpretation. In recognition of how difficult it is for interpreters to keep up with the growing and diverse body of relevant literature, the Journal will publish reviews of recent books, professional meetings and workshops, government publications and original literature reviews and bibliographies dealing with interpretation. The Journal also includes a *"Research Briefs"* section. This section will accept reports of ongoing interpretation research. Also it will provide an outlet for summaries of research studies with limited scope. Much interpretation research consists of small, "in-house" program evaluations and basic visitor studies. The purpose of this section is to communicate current research activities and allow readers to identify colleagues with similar interests. *"Research Briefs*" should be limited to 300-500 words.

The *Journal of Interpretation* takes a broad view of the field of interpretation and publishes manuscripts from a wide range of academic disciplines. The primary criterion for deeming a manuscript appropriate for the *Journal* is whether it offers new insights for interpreters or those who study interpretation.

Manuscript Instructions

Manuscripts - Manuscripts will be accepted with the understanding that their content is unpublished and not being submitted elsewhere. All parts of the manuscript, including title page, abstract, tables and legends, should be typed, double-spaced on one side of 81/2 x 11 inch white paper. Margins should be one inch on all sides, and manuscript pages should be numbered consecutively in the top right corner. All papers must be submitted in English. Translations of papers previously published in other languages will be considered for publication, but this information must be supplied by the author when the manuscript is submitted.

Titles. Must be as brief as possible (6 to 12 words). Authors should also supply a shortened version of the title, suitable for the running head, not exceeding 50 character spaces.

Affiliation. On the title page include full names of authors, academic and/or other professional affiliations and the complete mailing address of the author to whom proofs and correspondence should be sent. An e-mail address and phone and fax numbers would also be helpful. As all manuscripts will be reviewed anonymously, the name (s) of the author(s) should only appear on the title page.

Abstract. Each paper should be summarized in an abstract of no more than 150 words. The abstract will preface the paper and should be a comprehensive summary of the paper's content, including the purpose or problem, methods, findings, and implications or applications. It should enable the reader to determine exactly what the paper is about and make an informed decision about whether to read the entire paper.

Keywords. Authors must supply from five (5) to ten (10) key words or phrases which identify the most important subjects covered by the paper.

References. Include only references to books, articles, and bulletins actually cited in the text. All references must follow the *Publication Manual of the American Psychological Association* (APA), 4th edition. References in the text should cite the author's last name, year of publication and page, if appropriate. All references used in the text should appear at the end of the type script in alphabetical order using APA style.

Figures. All figures must be discussed in the text and numbered in order of mention. *Each figure must be submitted in camera-ready form*. Photocopies are not acceptable. Figures must be submitted either as black & white glossy photographs or as photostats (bromides). Label each figure with article title, author's name and figure number, by attaching a separate sheet of white paper to the back of each figure. Do not write on the camera-ready art. Each figure should be provided with a brief, descriptive legend. All legends should be typed on a separate page at the end of the manuscript.

Tables. All tables must be discussed in the text and numbered in order of mention. Each table should have a brief descriptive title. Do not include explanatory material in the title: use footnotes keyed to the table with superior lowercase letters. Place all footnotes to a table at the end of the table. Define all data in the column heads. Every table should be fully understandable without reference to the text. Type all tables on separate sheets; do not include them within the text.

Permissions. If any figure, table or more than a few lines of text from a previously published work are included in a manuscript, the author must obtain written permission for publication from the copyright holder and forward a copy to the Editor with the manuscript.

Copyright. Under the copyright law, the transfer of copyright from the author to the publisher must be explicitly stated to enable the publisher to ensure maximum dissemination of the author's work. A completed copyright form sent to you with the acknowledgment must be returned to the publisher before any manuscript can be assigned an issue for publication.

Proofs. All proofs must be corrected and returned to the publisher within 48 hours of receipt. If the manuscript is not returned within the allotted time, the editor will proofread the article and it will be printed per his/her instruction. Only correction of typographical errors is permitted. The author will be charged for additional alterations to text at the proof stage.

Submission. Please submit an original and three copies of your manuscript to: Ted T. Cable, Editor, *Journal of Interpretation*, Department of Horticulture, Forestry and Recreation Resources, 2021 Throckmorton Hall, Kansas State University, Manhattan, KS 66506. Authors whose manuscripts are accepted for publication must submit final manuscripts on computer disk.

National Association for Interpretation Membership Application

Please check the category for which you are applying:
(For rates and membership benefits see chart below)

Student (full-time)	Regular	Institutional	Commercial
☐ Basic	☐ Basic	☐ Basic	☐ Basic
☐ Standard	☐ Standard	☐ Standard	☐ Standard
☐ Plus	☐ Plus	☐ Plus	☐ Plus
☐ Family	☐ Life	☐ Supporting	

If you have signed up for a membership category in which you receive only one publication, please make your choice below.

☐ *Legacy* ☐ *Journal of Interpretation**

Complete the following (please type or print *clearly*):

Name____
(Institutional and Commercial applicants may use this space to identify a contact person)

Organization____

Address____

City/State/Zip____

Country____

Work phone____________________FAX____________________

Home Phone____________________E-Mail____________________

Employer / Agency ____

Position / Title ____

If referred by an NAI member - who? ________________________

Family membership only:

Spouse's name:____

Spouse's employer/agency: ______________________________

Position title ____

		Domestic	Int'l	Section		Region	Legacy		Journal*	Discounts**
STUDENT	- Basic	$15	$20	1	or	1	-		-	1
(full-time)	- Standard	$25	$30	1	&	1	1	or	1	1
	- Plus	$35	$40	1	&	1	1	&	1	1
REGULAR	- Basic	$45	$55	1	or	1	-		-	1
	- Standard	$65	$75	1	&	1	1	or	1	1
	- Plus	$75	$85	1	&	1	1	&	1	1
FAMILY		$75	$85	1		1	1	or	1	2
INSTITUTIONAL	- Basic	$125	$135	1	or	1	1	or	1	2
	- Standard	$165	$180	1	&	1	2	&	2	2
	- Plus	$195	$210	1	&	1	3	&	3	3
COMMERCIAL	- Basic	$225	$235	1	&	1	1	&	1	1
	- Standard	$500	$550	2	&	1	2	&	2	2
	- Plus	$1000	$1100	3	&	1	3	&	3	3
LIFE		$850	$950	1	&	1	1	&	1	1
SUPPORTING		$1,000	$1,000	7	&	1	1	&	1	1
Legacy - only		$30	$40							
Journal of Interp.* - only		$35	$45 (Journal & Legacy Library Package - $45)							
Add Section or Region		$10 ea.	$20 ea.							

Sections: At the Basic membership levels you are placed in a region automatically unless a section is chosen instead. All other categories include affiliation with one section and one region. You may belong to additional sections for $10 per section. Please see the chart to the bottom left. If applicable, indicate your section choice(s) below.

- ☐ African American Experience
- ☐ Council for American Indian Interpretation
- ☐ Environmental Education
- ☐ Nature Center Directors/Administrators
- ☐ Resource Interpretation - Heritage Tourism
- ☐ Visual Communications
- ☐ Zoo, Wildlife Parks and Aquaria

Method of Payment

(For dues amounts see chart at the bottom left.)

☐ My check/money order made to National Association for Interpretation for $ ______________ in U.S. dollars is enclosed.

☐ Please invoice:
Purchase Order #______________

Charge to my ☐ Visa ☐ MasterCard ☐ American Express ☐ Discover

Card number__________________________Expiration date__________

Signature__________________________________

NAI is a Nonprofit Colorado Corporation - Tax Exempt under IRS 501(c)3; FEIN 84-1036938.

Send application and dues
in U.S. funds to:
NAI
P.O. Box 1892
Fort Collins, CO 80522
phone: 970-484-8283
fax: 970-484-8179

Member Benefits

All membership categories will receive the quarterly *NAI news* from the national office, a region newsletter &/or section newsletter, a membership directory, the Interpreters Green Pages, Jobs in Interpretation (by request) and discounts for national workshops and publications.

* *Journal of Interpretation* - This is NAI's peer-juried, professional journal and is published once each year. In 1996 a Special Index issue is being produced with bibliographic references including keywords for all previous *Legacy* and *Journal of Interpretation* articles. The first full *Journal of Interpretation* is scheduled for publication in 1997.

** Annual membership begins the month you join. Membership discounts are transferrable for institutional and commercial categories only. Regional workshop discounts are only available if you are a member of the specific region.

NOTES